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AUGUST, 1912

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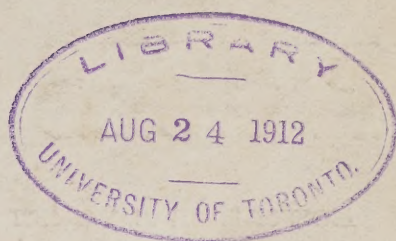
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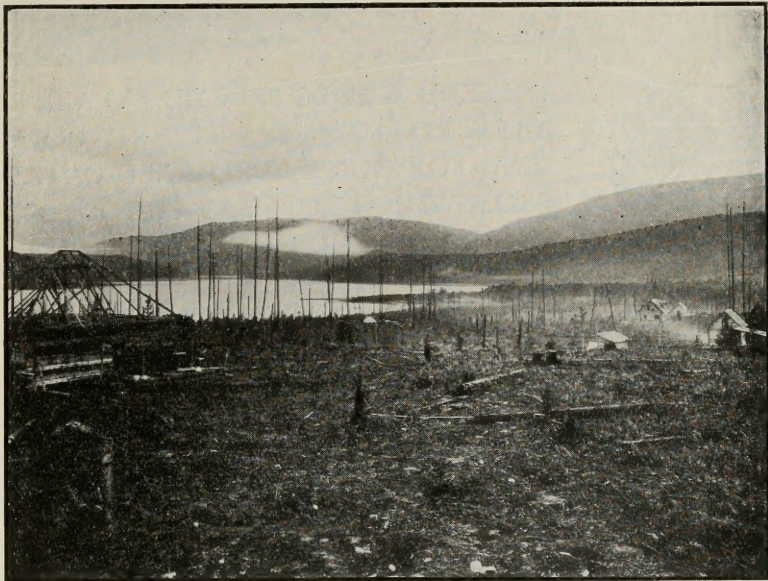
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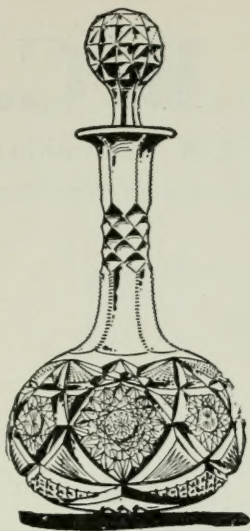
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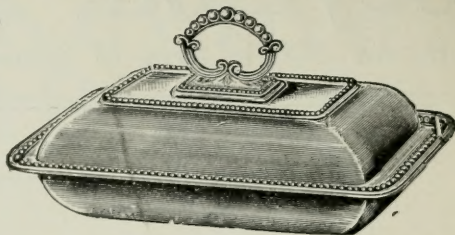
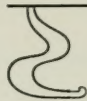
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FORT GEORGE

As a Manufacturing Centre

(Vancouver News-Adv., Jan. 18.)

The great possibilities of some of the points in the Central Interior of this province as manufacturing centres are becoming better known every day from the reports brought down by those who are engaged in investigating the resources of the North. Not least important among the factors that will make up the industrial growth of some of these new centres are the water powers which are found in close proximity to raw materials.

A report has just been filed at Victoria on water power of the Willow River, about seventeen miles east of FORT GEORGE. The Willow River is a tributary of the Fraser, entering the latter river about twenty-five miles above the junction of the Nechaco with the Fraser. The Willow Canyon is located about thirty miles above the mouth of the river and is approximately due east from FORT GEORGE, a distance of some seventeen miles.

The canyon is formed from a huge mass of soil and igneous rock that is about 12,000 feet or a little more than two miles in length, with walls as high as 250 feet on either side. There are really two distinct canyons, although both are really a part of the same large one. In the bottom of each of the two at low water the river varies from ten to sixty feet in width, averaging about forty feet, and in some places as deep as twenty feet. The vertical fall from water level at the head to water level at the foot is approximately 200 feet. At this canyon it is proposed by the FORT GEORGE Power Company, Limited — a company which has undertaken the work of development—to develop cheap power for manufacturing and other purposes. Several tests have been made; one at extreme low water in August last, showing a flow of 250 second feet. In the development scheme a dam is planned to create a service reservoir which will be the means of maintaining a constant head of water on a turbine to be installed in a power house situated on the lower face of the dam. In addition to this, a smaller dam, placed near the middle of the upper canyon, will create a local storage reservoir covering approximately two square miles to an average depth of about thirty feet.

According to the report, 40,000 or 50,000 h. p. might be obtained with sufficient storage.

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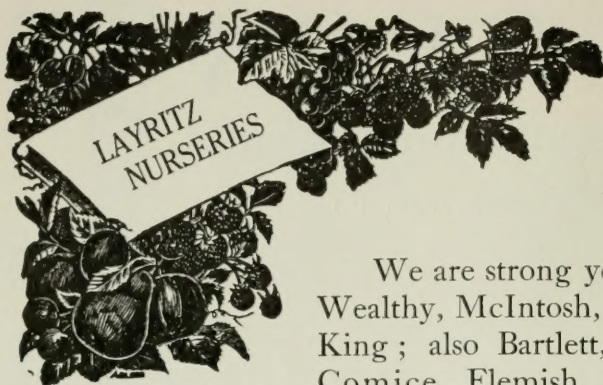
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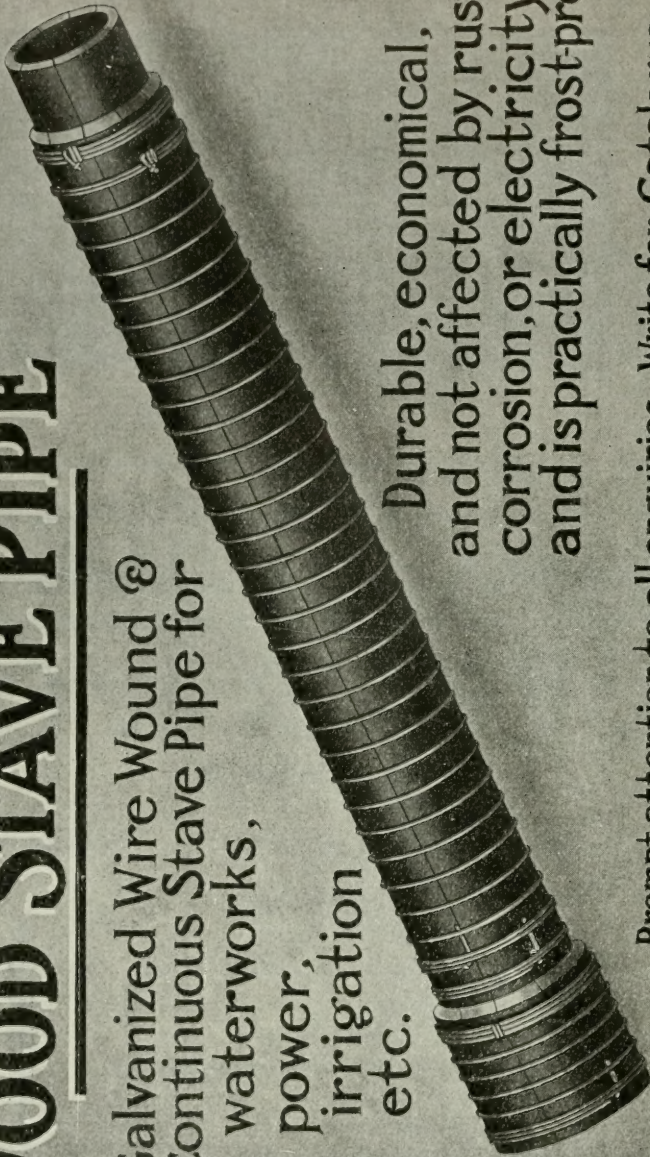
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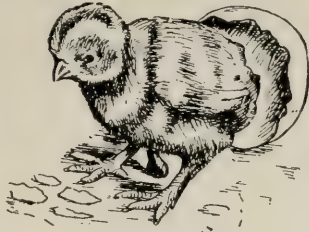
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THE FRUIT MAGAZINE

Scientific Farmer and Canadian Citizen

VOL. V

VANCOUVER, AUGUST, 1912

No. 5

Crown Gall and Hairy Root

BROWN ROT OF STONE FRUITS

By Mr. F. E. Jones, New Westminster, B. C.

Crown Gall is a disease common in nurseries on the roots and shoots of various plants, and likely to continue on the plants when they are removed to orchards, vineyards, gardens, and hothouses. It also occurs on various field crops. The name is used for the disease whatever the situations of the galls in the plants. When the U. S. government began the study of it, the cause of crown gall was unknown, and by then it has been determined. Bacteria were seen in crown galls of the daisy in 1904, and the studies then undertaken have been pursued continuously to date, and were first offered in complete form in Bulletin 213 of the U. S. D. A. The first successful isolations and infections were obtained in 1906. And the biology of the bacterial organisms derived from the daisy has been determined more carefully than that from galls on other hosts.

The organism is a short rod multiplying by fussion, and motile by means of polar flagella. This Schizomycete differs from many bacterial organisms in not producing open cavities in the plant. It appears to occupy the living cells in small quantities, causing rapid proliferation. It produces galls, most readily in soft, rapidly growing tissues. Ordinarily resting tissues can not be made to produce galls. The galls are often rapidly invaded by saprophytic bacteria, especially the softer galls. The galls also invite various parasites nematodes, fungus root rot, fire blight of apple and pear, etc., and some of these are able to cause great damage. They have not been able to distinguish differences between hard galls and soft galls. Overfed plants are more subject to the disease than those making a moderate growth. The size of the tumor, other things being equal, de-

pends on how rapidly the plants are growing. The apple Hairy-Root hitherto a disease of unknown origin and supposed to be non-affectus, has been shown to be due to bacteria which differ, if at all, only slightly from crown gall organisms. This casual organism is located not in the hairy-root themselves, but in the flattened tumor from which such roots arise. Typical Hairy-root has been produced on apple seedlings, by pure culture inoculations. The disease is one which progresses slowly, stunting the plant first and finally destroying it, unless removed by extupation, or by the development of increased resistance on the part of the plant.

The organism is moderately susceptible to germicide, but cannot be reached in the galls. Moreover, germicidal treatment after excision of the galls cannot be depended on in all cases, because of the tendency of the organisms to form metastases. The organism is believed to occur inside the rapidly proliferating cells, which, by its presence, are stimulated to develope with the formation of the tumor.

Various names have been applied to this disease among which may be mentioned. Besides the names previously given, the following: "Root Knot," "Root Gall," "Woolly Knot," "Tumors," "Trunk Kernel," etc.

Crown Gall and Hairy Root are best known as occurring on nursery stock or young trees. Several forms of the disease are known, including the following: Soft form of Crown Gall, hard form of Crown Gall, simple form of Hairy Root, Woolly Knot form of Hairy Root, Aerial form of Hairy Root.

The soft form of Crown Gall is found on seedlings, grafted, and budded trees, and

consists at first of a soft, succulent growth of callus tissues, which is white in color on the surface. As the galls mature the surface becomes dark brown in color or almost black and the tissues often become quite hard, due to the formation of woody tissues. The surface is wrinkled and convoluted, due to unequal growth. A bark is not formed and the galls usually decay at the end of the season's growth. Grows from cambium, stimulating them to form malformation.

The simple form of Hairy Root is most common on seedlings, but occurs occasionally on the grafted and budded trees. In this form numerous roots are found growing at right angles to the surface of the tap roots or stems. They may occur scattered or in tufts. These roots differ from normal fibrous roots in being more succulent or of greater diameter. When dry they become hair-like in appearance.

The Woolly Knot form is found on older seedlings or on grafted and budded trees. This form somewhat resembles a case of hard Crown Gall, which had developed on abundance of the succulent roots described above from its surface.

The aerial form of Hairy Root, often called "stem," or locally "trunk kernel," develops on branches and trunks of trees most commonly in the orchard. At first they appear as smooth swellings which are rounded but often irregular in outline. They later develop on the inside an abundance of adventitious roots, which break the rough bark, giving it a watery appearance. These roots do not develop further than the surface of the trees, but morphologically are very similar to the Woolly Knot form of Hairy Root, and if the branches are cut off and placed in moist soil, same will develop into typical cases of Woolly Knot.

Recent investigations of the Plant Pathologists of the Department of Agriculture have shown that both Crown Gall and Hairy Root forms of the disease are due to bacteria which have been isolated, from pure culture and the typical disease produced by inoculating with the germ of the other. The several forms of the disease which have been described, however, are so nearly related morphologically that it is not improbable that all are caused by the same organism and are merely forms of the same disease. At least, they may be so considered for practical purposes.

Crown Gall and Hairy Root develop on the trees in the nursery and are the most

serious diseases with which the nurserymen have to contend. Many states have enacted laws prohibiting nurserymen from selling infested stock, and since the diseases are everywhere present in nurseries, these laws, where enforced, have caused a great loss to the nurserymen.

A great deal of value might be learned from a detailed discussion of the disease as it occurs in the nursery but sufficient space is not available, and, since these notes are intended primarily, for nurserymen, I will discuss only the features which I believe will be of interest to them and the orchardist.

Crown Gall and Hairy Root, in all its forms, develops, so far as is known, only at wounds. Throughout all seedlings nurseries in the United States Crown Gall was found to be present in one-half per cent of all trees, and Hairy Root on one per cent. Since these seedlings are either used for piece or whole root grafts, or as stock on which to practice budding, it is seen that unless the nurserymen is careful to use only healthy seedlings many grafted and budded trees are infested. In root grafted trees wounds are made at the lower end of the scion piece and at the upper and lower ends of the root piece; since all forms may develop at wounds we find Crown Gall or Hairy Root developing at these points. That is, at the graft union, either on the scion or root piece and at the end of the root. Ninety per cent of galls formed in this way are found to develop from the lower end of the scion piece at the graft union.

On budded trees Crown Gall or Hairy Root develops at the root tip where the tap roots have been cut off and at the wound made in inserting the bud. The Hairy Root forms are more abundant than the gall forms on the budded trees. The disease on the whole develops more abundantly on root grafted trees than on the budded trees.

The Crown Gall forms are found to develop most abundantly on heavy soils, while the Hairy Root forms may be more abundant on light soils. There has been a great difference of opinion regarding the amount of damage resulting in the orchard from planting diseased trees. There have been reports of great losses to orchard trees due to the action of Crown Gall and Hairy Root. Many writers claim that diseased trees never come into profitable bearing. It is evident that much confusion has resulted from the fact that the disease is very serious in the orchard on some stone fruits and writers

have assumed that the same was true of the apple. It is also evident that other troubles, notably root rot, has been confused with Crown Gall. Careful investigations have shown that much less injury has resulted in the orchard from planting diseased trees than was supposed.

RECOMMENDATIONS.

In order to keep the nursery as free as possible from the disease all diseased trees should be left in the field at the time of digging and burned as soon as dry.

The nurseryman should, as far as possible, get scions from healthy trees by growing them under careful selection or purchasing them from others who do this. Never plant diseased trees in the scion orchard.

Buy the best grades of healthy seedlings for budding and root grafting. Insist that growers of apple seedlings cull out and burn all diseased ones at the time of digging.

Make close fitting root grafts, avoiding blunt ends of the root and scion in the union. Wrap with unwaxed cloth or continuous thread wrapping, covering completely and firmly the wounded edges in the union. The root and scion should be approximately of the same diameter.

Store root grafts preferably in sand. If the period of planting is delayed beyond two weeks they should be placed in cold storage at a temperature a few degrees above the freezing point.

Plant the union of root grafts about 3 to 4 feet below the surface of the ground. Be careful not to break the callus in planting and avoid wounding the young plants in cultivation.

Propagate by budding, as far as possible, the few varieties most susceptible to Crown Gall and Hairy Root. Among these are the Wealthy, Yellow Transparent, Wolf River, Ben Davis and Northern Spy.

Avoid heavy, wet soils, since they favor an increase of disease.

Growers of seedlings should avoid wounding the young trees with the hoe or other implements of cultivation. The orchardist is advised to plant the healthiest trees obtainable, since the initial cost of the orchard is only a small part of the final outlay. If a tree becomes diseased during the first three or four years so that its growth is hindered, dig it up and plant a healthy tree in its place. If trees in an older orchard are diseased, but still bearing profitable crops, allow them to remain in the orchard, unless there is danger of infecting more profitable plants, rasp-

berries, grapes, peaches. In such case they should be removed, since Crown Gall from the apple tree may infect these plants.

If the growing of nursery stock were confined to apple trees nursery inspection for Crown Gall would hardly be necessary. Since the disease attacks and kills grapevines, raspberries and probably peach trees, and since it may be communicated to them from apple trees, it is clearly the duty of a nursery inspector to insist that apple trees diseased with Crown Gall shall not be sold. It is best to include in the same category apple trees diseased with Hairy Root.

On the other hand, an inspector should be certain that apple trees are diseased with Crown Gall or Hairy Root before condemning them. Warts and pimples are not necessarily Crown Gall, nor are fibrous roots certainly Hairy Root. The tendency to form fibrous roots exists under certain soil conditions.

BROWN ROT OF STONE FRUITS.

Imperfect fungi attacking twigs, fruit and blossoms, attacks plums, cherry, peach and prune. In Oregon the disease is mostly on the prune. Warm, moist weather at the time the fruit is about full grown, will almost certainly develop the disease to a very large extent in districts subject to its attacks, when measures of a preventive nature have been neglected, and cause the loss of a large portion of the crop.

The fruit is most commonly attacked. It appears at first as small, dark brown decaying spots which gradually enlarge, until the whole fruit becomes brown and rotten. The rot does not at first cause any shrivelling of the tissues, nor does it cause the spots to become sunken.

The ash-colored, velvety coating, or mold, seen on plums infected with the disease, shows the final or fruiting stage of development. If examined with pocket lens, this mould will be seen to consist of numerous tufts of minute thread-like projections and if further examined under a compound microscope, it will be seen that each of these "minute threads" is composed of a number of small, oval bodies joined end to end like a string of beads. These bead-like bodies are the spores of the fungus, and each infected fruit is capable of producing them in thousands. These threads are about one-eighth or three-sixteenths of an inch in diameter.

These spores remain unchanged for a great length of time, or, on the other hand,

they may, when conditions are favorable, germinate and grow so rapidly that infected fruit soon becomes capable of producing crops of spores.

Through the agency of winds, insects, etc., spores are distributed widely and when one of them lodges on a fruit sufficiently soft, and when moisture is present, it starts the disease again, sending out a germinating tube which penetrates the skin of the fruit; here it grows rapidly, branching, through the pulp in all directions, forming a dense mass of mycelium, which absorbs the contents of the cells of the fruit, disorganizing the tissues and causing the so-called "brown rot."

The mycelium, or plant body, of the fungus remains dormant during the winter in the dried or mummified fruit which are left on the trees infected with the disease, or on the ground beneath them, and when warm weather comes the following season will produce an abundant crop of spores to start infection afresh.

A blossom blight may result from infection of the blossoms early in the spring. A twig blight may also be produced, but this probably only occurs when the blossoms or fruit have been infected and the fungus gained an entrance to the twig through them.

The fungus is not able to enter the twigs directly. Peaches and apricots are more susceptible to the twig form of the disease than other stone fruits.

The fungus winters over on the "mummies" left hanging on the trees or lying on the ground. It is probable also that the disease may be carried over the winter by spores adhering to bud scales, twigs, etc.

There are two spore forms.

The summer spore form, which has already been described.

The winter, or sexual stage (conidial stage) which develops in the early spring from mummies that have fallen to the ground. This does not develop on the mummies that have just fallen to the ground the previous fall but on those that have lain for 18 months. This stage of the fungus is developed from the resting masses of Mycelium called Sclerotia which develop in the tissues of mummified fruits. A definite fruit body is produced known as apothecium commonly spoken of as a "cup fungus." This consists of a stalk from one-fourth to one-half inch in diameter borne at the surface of the ground

surrounding the buried or half buried mummies. Several may be formed from the same mummy. The inner surface of the expanded bell-shaped portion is lined by great numbers of cylindrical sacks called asci, each of which contains spores. These layer of asci forms a smooth layer. The spores are ejected forcibly from the asci and wafted by currents of air, finally reach the trees. It is very probable that much of the blossom blight is caused by infection from these spores.

In dealing with this disease, it will be easily seen that the most successful treatment will necessarily be of a preventive nature. It is usually first noticed in the season on cherries, especially on soft varieties which burst their skins after rainstorms. Such as the Governor Wood, and undoubtedly, infected fruits which are left to dry up on these trees are a fertile source of infection to plums later in the season. Great care should be taken to gather and burn these, also the first infected, mouldy fruit noticed on plum trees. In orchards which have been infected this season, the first thing to be done is to pick off, as soon as possible in the fall, all dried up or mummified fruit which may have been left on the trees, then with a fine-toothed garden rake gather together all fruit that may have fallen to the ground, together with fallen leaves and trash, and burn up all these sources of infection.

Plowing early in the spring before the buds open is to be recommended where possible and consistent with good horticultural practice, but one has to plow them deep. However the second plowing may turn them up again. One finds the cup fungus mostly where mummies are slightly buried in the ground.

In Oregon, it is stated by Professor Cordley, "That now the disease is well established, any prune or cherry grower who fails to employ preventive measures against brown rot deliberately takes the chance of losing a large proportion of his crop, even though such loss may occur every year." He recommends for prunes, (1) spray with Bordeaux mixture early in spring some time before buds open; (2) spray again just as buds are opening; (3) spray again when petals begin to fall; (4) spray again ten days later. It has been found to be unsafe to use Bordeaux mixture on peaches except in very weak strength. So that a special spray known as self boiled Lime Sulphur is recommended for use on peach foliage.

The following method of preventing brown

rot on the peach has been recommended by Scott: Spray

1—Three or four weeks after petals fall.

2—Three weeks later.

3—One month before fruit ripens.

Use 8-8-50 self boiled Lime Sulphur.

Fruit should be thinned where practicable so that no two fruits touch each other, as it is found that may be retained at the point where the fruit touch and thus favor infection.

In selecting and packing fruit for market *too much care cannot* be exercised to exclude not only infected fruit, but all that which has been in contact with it, and it has been amply demonstrated that almost the entire crops of some badly infected orchards were unfit for shipment.

There has been quite a loss due to the development of the disease in the packages en route to market, the temperature inside cars filled with fruit being high enough, and sufficient moisture present to furnish favorable conditions for the spread of the rot to a large portion of the shipment.

DON'T FORGET.

Fannie Herron Wingate.

A pleasant "Good Morning!" or "How do you do?"

A smile, or a grip of the hand,
And some one's dark hour has been made
to grow bright,

And some weak one feels he can stand.

A few written words to the wanderer afar,
With many temptations to brave,
And the spirit of life breathing forth from
the lines

From many grave errors may save.

A flower to the sick or the suffering one
(Sick in body or mind, 'tis the same),
And the thought that would not be accepted
in words

May silently work "In His name."

The "lend-a-hand way" is a very good way,
Though it may not bring fame or applause;
But to do what you can with a hearty good
will—

Ah, that is what counts in a cause!

So sing your song blithely, or smile your
bright smile,

Let kind words ring out true and clear,
For it's up to you, comrade, to simply give
out

Of your best toward a needy world's
cheer.

MARJORIE'S ALMANAC.

T. B. Adrich.

Robins in the tree-top,
Blossoms in the grass,
Green things a-growing
Everywhere you pass;
Sudden little breezes,
Showers of silver dew,
Black bough and bent twig
Budding out anew;
Pine tree and willow tree,
Fringed elm and larch—
Don't you think that May-time's
Pleasanter than March?

Apples in the orchard
Mellowing one by one;
Drowsy scents and murmurs
Strawberries upturning
Soft cheeks to the sun;
Roses faint with sweetness,
Lilies fair of face.
Drowsy scents and murmurs
Haunting every place;
Lengths of golden sunshine,
Moonlight bright as day—
Don't you think that summer's
Pleasanter than May?

Roger in the cornpatch
Whistling negro songs;
Pussy by the hearthside
Romping with the tongs;
Chestnuts in the ashes
Bursting through the rind;
Red leaf and yellow leaf
Rustling down the wind;
Mother "doin' peaches"
All the afternoon—
Don't you think that autumn's
Pleasanter than June?

Little fairy snowflakes
Dancing in the flue;
Old Mr. Santa Claus
What is keeping you?
Twilight and firelight
Shadows come and go;
Merry chime of sleigh bells
Tinkling through the snow;
Mother knitting stockings
(Pussy's got the ball)—
Don't you think that winter's
Pleasanter than fall?

Our Ottawa Letter

From Our Own Representative at the National Capital

The New Brunswick movement to attract fruit growing on a large scale seems to be developing favorably, though not quite so rapidly, perhaps, as some of its promoters would like. But the fact remains that some satisfactory sales of fruit lands have been made and the business shows signs of sound, healthy development.

Fruit has been raised for a long time past in many fertile New Brunswick valleys, but not to a sufficient extent for regular and profitable export. It seems that apple orchards down there are usually small and intended only for family use. They are not regarded as a possibly prolific source of revenue. Wherever apples have been well cultivated in New Brunswick, however, by men who seriously propose to convert their orchards into money making investments, they have made good returns for outlay. Now that attention has been called to the successful growth of apples and other fruits of superior quality, new men who have made themselves acquainted with the fruit areas of the province are taking up land for fruit growing purposes and prospects are good for practical fruit developments, not only in the St. John Valley region, but in many other districts equally favored by nature for the purposes referred to. I am told that comparatively few of the farmers in New Brunswick until recently planted more than half a dozen or a dozen apple trees around about their homes, and these have in very few instances been cared for as in Nova Scotia and Ontario. Now that practical apple growers are coming out from the Mother Country under the auspices of such pioneers as Sir Wm. Van Horne and other capitalists interested in the development of unoccupied lands, we may look with confidence to a general waking up in the fruit growing regions of New Brunswick.

It is announced that Professor W. Saxby Blair, who for some time has satisfactorily and honorably filled the chair of horticulture at Macdonald College, has left to take charge of the experimental fruit farms established by the Dominion Government in the Maritime provinces. He will live at the new farm at Kentville, Nova Scotia, and will direct the work there and also superintend the operations at the other three farms in the eastern provinces. Prof. Blair is a well known hor-

ticulturist of the Dominion. He was born at Onslow, Nova Scotia, and has been an horticulturist all his life. He has held the position of horticulturist at the Maritime experimental farm at Nappan, Nova Scotia, and upon the establishment of Macdonald College joined the staff that had been selected by Dr. James W. Robertson, then principal of the College.

Arrangements have been completed by Hon. Martin Burrell for the reorganization of the inspection of fruit under the Fruit Marks Act. Hitherto the main interpretation of the Act has been directed towards the inspection of Canadian grown fruit intended for export. It is now proposed to make effective provision for ensuring the competition of foreign growers in the Canadian markets being placed on a fairer basis than is the case at present. The force of inspectors has been increased by a considerable number of men selected with great care as to their qualifications. A chief inspector will be placed over each province. Mr. J. A. Ruddick has left for the West, where he will complete arrangements for the British Columbia Inspectorate. He was accompanied by Mr. C. W. Baxter, of Ottawa, who has been appointed as chief inspector for the Prairie Provinces. It is believed that as a result of the reorganization that greater efficiency will obtain, and while the interests of the Canadian grower will be properly safeguarded, the consumers will be put in a position to know that they are getting what they should get under the safeguards of the Canadian act.

The orchard areas of Canada are now a most important national asset, constituting British Columbia the increase of acreage is very marked and both provinces will ship large quantities to the Prairie Provinces, which are the happy hunting ground" for the Washington and Oregon growers with their vast annual surplus of fruit, and this year appears to promise a large crop, all told, in the provinces and states referred to.

Here in Ottawa we have been witnessing a remarkable visitation of moths, following the invasion of the caterpillars mentioned in the last issue of the *Fruit Magazine*. The moths suddenly appeared in dense clouds wherever there was a street electric light, and in the morning the posts were literally thick with them and the streets below the lights

covered with tens of thousands of them. The fronts of houses near arc lights were also covered in a single night. Although myriads of the moths breathed their last the first night of the visitation, they were succeeded by other myriads the following evening. Dr. C. C. Hewitt, Dominion Entomologist, warned the people through the press some time back of the coming of the moths, stating that they might be expected to remain with us about ten days, the survivors laying eggs all the time should the weather prove not to be unfavorable. With normal conditions, we are told, another crop of the caterpillars from which the moths originally came, will be produced next spring.

When the government reports of the caterpillar plague of 1912 are published, we may learn the full extent of the damage done, and not before. In the Upper Ottawa Valley we already know that hundreds of square miles of forest have been denuded of verdure. Deciduous trees were literally stripped of their leafy covering in June. It is feared that a great deal of fine growing wood, deprived of the protection of the foliage, will be found to have been damaged beyond recovery.

Details in regard to fruit and hay crop prospects in that fruitful portion of the United Kingdom known as the West of England, have been gathered from a reliable source and forwarded to the Canadian Department of Trade and Commerce by Mr. E. D. Arnaud, Canada's Trade Commissioner at Bristol, referring to conditions of about the middle of last month as follows:

Apples—Nearly a full crop, especially late varieties.

Pears—About half an average crop of early kinds and three-quarters of late sorts.

Plums—Of early sorts a half and late varieties less than three-quarters.

Cherries—Hardly half a crop.

Gooseberries—About three-quarters of a crop.

Currants—Black, half a crop; Red, full crop.

Tomatoes—A full crop.

Peaches and Apricots—About a quarter crop.

Hay—Clover, three-quarters of a crop. Meadow, full. Doubts have been expressed in some quarters whether the unusually dry weather experienced throughout the months of April and May had not seriously injured this crop, but in this district later rains seem to have saved the situation.

On our own side of the Atlantic we learn

from reports gathered early in the month from all parts of Canada that prospects then were on the whole satisfactory as regards most of the fruit crops for the present year. Considerable damage was expected in early May and June from heavy and continued rains and caterpillars. With regard to the rains, however, no serious damage was done after all, and as to the caterpillars, it is good to learn that many fruit growers, warned in time, attended to their spraying, with marked success. In some low-lying districts there was more or less damage by frosts during the prevalence of unsettled, inclement weather, but growing fruit suffered only lightly from this cause. Despite the hard work of the millions of caterpillars, more particularly in Eastern Ontario, and Quebec, appearances were promising for fairly good returns for apple growers. Advices from British Columbia and Nova Scotia reported excellent prospects for large crops of apples. Plums and grapes looked good on the whole for at least an average crop; but peaches were expected to show a shortage. Although this last is the outlook reported in the official returns, I am bound to say I never saw finer imported peaches or larger quantities of the less showy and less expensive grades on sale here at this time of the year than this very month of July.

A week's later returns, compiled and published by the fruit branch of the Department of Agriculture, are summarized as follows:

Pears—The condition of the pear crop per tree is good.

Plums—Slightly above the average.

Peaches—No great change has taken place in the conditions with reference to this fruit. The Niagara district has a good setting of most varieties. Southwestern Ontario will have a very short crop, probably not enough to supply the home market. Many cases of winter killing, not apparent in the early part of the season, are now showing in both the Niagara district and Western Ontario. The loss of peach trees in Western Ontario will be very serious and will probably discourage large plantations for many years, except in limited areas. The British Columbia crop per tree is good, but the aggregate quantity is small.

Cherries—Short crop indicated. Many signs of winter killing of trees.

Grapes—Winter killing larger than expected, but not serious.

Tomatoes—Making quick growth with the advent of hot weather.

Apples—The prospects for an excellent apple crop are maintained. In Eastern Ontario and in parts of Quebec the tent caterpillar was doing serious damage. With this exception, insect and fungous diseases were perhaps only normal. The number of well cared for orchards was on the increase and the result shows in the reports of better crops. British Columbia had a very light crop last year, and is looking with confidence to a heavy crop this year. Nova Scotia, though it had an exceptionally heavy crop last year, has prospects of almost as good a crop for the present season, though there are many contingencies that make the crop still uncertain.

The annual report for the past fiscal year of Trade Commissioner James A. Findlay, Glasgow, Scotland, deals extensively with the fruit imports from Canada. Mr. Findlay characterizes the Canadian apple season of 1911-12, so far as the Glasgow market was concerned, as one of large shipments from Ontario and Quebec, but viewed as a whole one of a disappointing and unprofitable nature to those handling the fruit at the Glasgow end. With the exception of a few parcels of colored fall varieties which realized good returns, prices generally were moderate. The course of prices was dominated early in the season by unusually heavy crops of exceptionally well-grown fruit from England, which competed with shipments of Ontario summer apples, followed by large shipments of Nova Scotian Gravensteins, Kings, Blenheims, etc.

Ontario early apple shipments receive some appreciative notices. Ontario summer apples and early fall varieties, Mr. Findlay states, were of good size, clean skinned and good color, and as a rule they were well graded and arrived in sound condition. The clean appearance of that season's apples is regarded by the Commissioner as evident testimony to increased care in spraying, pruning, etc. General satisfaction was expressed at the time, but from the advent of the winter onwards the dominant note was one of disappointment on account of lack of staying power in the fruit. Climatic conditions during growth negated those qualities in Canadian winter kinds which have contributed so much to their popularity in the Glasgow and other markets. Shipments from the middle of November onwards arrived showing traces of being over-mature and at the end of November and December arrivals resulted in very serious loss to all who "stocked" beyond im-

mediate use. Spys, a universal favorite, were conspicuous for scarcity, poor quality, over-ripeness and chipped condition; but all winter varieties were similarly deficient in keeping quality, and though at the time of receipt some were in sound order, they did not possess the usual crisp, firm characteristics noticeable in Canadian long-keeping varieties, but were soft and easily bruised. Retailers stated that the latest arrivals of Spys, Baldwins, etc., showed material shrinkage and decay every day. These conditions contributed to lessen the demand and lower prices. Greenings were of exceptionally fine stock, being clean and bold fruit. Golden Russets, on the contrary, were inferior quality, green, and poor size. Baldwins and some other winter stock were largely clean, and of fair size, but these qualities were lost sight of in their non-keeping properties. Several lots of late arrivals were affected by frost, one consignment being almost worthless. There were some notable cases of bad grading of barreled stock, of such a character, indeed, as to encourage a belief that an united effort was being made in one quarter at least to evade the Fruit Marks Act. No. 1 grade in many cases was only ordinary, and No. 2 only equal to what No. 3 ought to be. Boxed apples generally were of fair quality and clean, but on the whole it was the opinion of Glasgow buyers that there was room for considerable improvement.

Nova Scotia contributed a record quantity to the Glasgow market, viz., 153,219 barrels and 3,394 boxes. Such heavy consignments from that quarter, coupled with the quantities from Ontario, created an overloaded market with declining prices. The early arrivals, Gravensteins, were clear, fair color and size, and landed in good order except in the case of one steamer delayed on the way. Later arrivals, Kings, Blenheims, etc., were generally of excellent quality, the Kings taking the place created by a scarcity of that variety from Ontario, and on this account were decidedly more popular than in years of normal supply from the latter province.

In Scotland, Nova Scotian apples generally, except Gravensteins, are considered of secondary quality to Ontario apples, and except when the latter are very scarce, are unlikely to bring so much money.

Imports from British Columbia consisted of 2,407 boxes apples and 648 boxes pears, an expansion over the previous year. Red

varieties of apples were irregular and inferior in quality and grade to the preceding season. The outstanding variety was Newtown Pippins, which were of satisfactory size and choice quality, but Jonathans were poor, McIntosh Red irregular in size and deficient in color, Cox's Orange inferior, and Spys poor both in color and size. The condition of arrivals was satisfactory. The pears also arrived in sound condition, except Lawrence variety, which were over-ripe.

The quantity of pears imported from Ontario showed a large falling off from previous seasons, there being only 3,764 cases and 62 half-barrels in cold storage, and 27 barrels in ordinary storage, the bulk of the latter being in poor condition, showing decided decay. The case is the most suitable package for this fruit. The pears generally were of fair quality, and Bartletts made very satisfactory prices. The bulk of arrivals came to hand in sound order and much larger quantities could be successfully distributed from Glasgow.

Box packers the coming season will be well advised to pack only fancy No. 1 grades, and to ship No. 2 grades in barrels, as the box trade is really a fancy trade. Frequently it has occurred in Glasgow that No. 2 boxes have realized only equivalent prices to No. 2 barrels, and on some occasions even not so high; and if the choicer fruit were relieved of the competition from these lower grade boxes, higher prices would be secured. Some of the later arrivals at Glasgow of boxed Greenings and Baldwins were in a very decayed condition.

A Barbadoes report to the Department of Trade and Commerce states that small consignments of apples reach that market from Canada and the United States, with some from England. It appears that last fall and winter the quantity imported was somewhat above the average, and as the fruit in most cases arrived in good condition, better prices were obtained than formerly. All apples coming into Barbadoes are on consignment, and if in good condition, find ready sale. A small quantity comes direct from Canada by the Pickford & Black steamers, but the largest part is received through New York, with which port there is a more rapid service. It is stated, however, that some at least of the apples received through New York are Canadian. The varieties which seem to stand the voyage best and find readiest sale are Baldwins, Spys and Russets. If shipped in moderate quantities, and not al-

lowed to chill before leaving Canada, the fruit reaches here in fairly good condition, and with a little more effort a slightly extended trade might be developed.

From Auckland, N. Z., Mr. W. A. Beddoe, Canadian Trade Commissioner there, reports as follows:

Some few weeks ago the Waitamata Fruit Growers' Association sent to Vancouver a sample consignment of apples. The intention was—if the shipment should prove a success—to follow it up with a carload lot. The head of this institution informed your Commissioner that last season fruit was shipped by a British Columbian firm to them on consignment with very satisfactory results. The New Zealand firm is now prepared to reciprocate and send a carload on consignment.

The Zealandia on this sailing also takes six cases of apples to Vancouver as a sample shipment. These apples come from Christchurch by boat and will be transferred at Auckland to the Zealandia.

Since the foregoing was written, a later crop report of the Fruit District has been issued. It says the prospects of the apple crop, as reported last month, founded upon the fruit bloom, are not borne out by the "set" of fruit. There has been an exceptionally heavy "drop," even where the "set" appeared to be fairly good; but in many cases, especially in orchards that bore heavily last year, notwithstanding the full bloom, little fruit is expected. The damage by the tent caterpillar, over a wide area comprising the Eastern part of Ontario and Western and Southern Quebec, has been serious. Nevertheless, it should be noted that correspondents usually under-estimate the quantity of fruit at this season of the year, just as they are inclined to over-estimate it on the appearance of bloom. It is not improbable, therefore, if conditions are favorable, that an improvement will be reported later in the season.

Taking 100 as a standard or fall crop, the percentages for the Dominion stand at 67 per cent. for early apples, 69 per cent. for fall apples, and 65 per cent. for winter apples. The average, for the Dominion, of all kinds of apples, therefore, would be 67 per cent.

Pears have depreciated somewhat during the month. The depreciation in plums has been rather marked. Cherries have not yielded as well as expected. Grapes are showing well everywhere. A fairly good crop of peaches will be harvested.

Breeding for Utility

The breeding of stock for utility is a subject that the farmer should give more attention to. Dollars and cents are what count in the operation of a farm, as well as any other business, and profitable results are only obtained through constant and careful attention to this subject. Mr. J. W. Kennedy of the Iowa State College of Agriculture, in discussing this question recently, said:

The "scrub" animal, whether pedigreed or not, must be obliterated.

There always has been and I believe there always will be in our agriculture, a place for each and every class of live stock. We must have horses, beef cattle, dairy cattle, sheep and swine. The man who breeds the right kind of animals of any one of the above mentioned classes will always find his work both useful to the community and profitable from his own standpoint. We need them all in our farming operations. Some men will succeed with one class of stock and make a failure with another and vice versa. The real secret of success in any line of work depends a great deal upon the amount of individual attention given it. The amount of enthusiasm and interest which any particular individual will give to any line of work will always be governed very largely by his own likes and dislikes for the same. This being true each man had best select and breed the class of stock which appeals to him most strongly. Where such a system is adopted success usually follows.

For over twenty years I have studied carefully the methods pursued by breeders of live stock, both the successful and the unsuccessful. The former are comparatively few in number compared with the latter. It has been my good fortune to have had the opportunity of observing the methods pursued on the best farms in the United States, Canada and eleven different European countries. I am frank to say that in no other line of work is a well-defined purpose so necessary as in the successful breeding of live stock. Each and every one of our present day breeds of live stock was brought up to its very highest degree of excellence by the sheer determination to carry out a well-defined purpose on the part of some two or three men. It is true

that hundreds and thousands of men were breeding, but only two or three in each instance, really succeeded. Why did the others fail? Simply because they were like the man walking slowly along the public highway and when stopped by a stranger who asked him "Where are you going?" his reply was, "I don't know, but I am on my way." It is just so with a great many breeders of stock—they don't know where they are going, but they are on the way, too often on the road to failure.

No man ever has succeeded and no man ever will succeed, for any length of time in breeding live stock who does not have as his slogan that one word "utility." Almost a century ago, Amos Cruickshank, the herdsman of Aberdeenshire," said that "the real test of value in beef cattle is their ability to turn straw, turnips and cake into pounds, shillings and pence at a profit." When ridiculed by his fellow breeders because he overlooked fashionable pedigrees and color markings, he replied that the only question in his mind was, "what is best for our country, our agriculture and our people." It would be a Godsend to our live stock interests if we had today a thousand Amos Cruickshanks. The useful animal has always been a money maker and will continue to be so in the future.

No man ever has succeeded and no man ever will succeed for any length of time in breeding live stock who attaches his kite to "faddism." We do not need to mention any one particular individual to demonstrate the folly of such work. There is hardly a county, in any live stock section of this or any other country, which has not anywhere from one to twenty men, who have clearly demonstrated that "faddism" is always a forerunner of failure. By "faddism" I refer to the tendency on the part of many men to disregard the really useful features on an animal and go to the extreme on certain blood lines, color markings, shape of ear, head, etc. I do not wish to be understood as being opposed to beauty of form, color or general appearance. I am not. In fact I always like to see the same when combined with the utility points. But if I had to sacrifice something in selecting

a breeding animal it would be the fancy points and not those which indicate utility.

The longer I study and handle live stock the more I am convinced that the first and most important point to be observed in all meat and milk producing animals, is a good middle. The signs of constitution and digestive capacity present their most visible manifestations in the body and not in the extremities. The animal is simply a machine to convert feed into more edible products such as meat and milk. Its capacity is governed almost solely by the size of the middle. These are points which mean dollars and cents to every man who handles live stock.

We must pay more attention to the question of size and vigor in our animals. Size always has been and always will be a vital point. It is usually associated with heavy and economical gains. Vigor is absolutely essential. It is associated with heavy gains and also helps to safeguard the animal in time of disease outbreaks. One of the chief causes for deterioration in both size and vigor of our animals is the use of immature sires and dams for breeding purposes. While both sire and dam exert an influence it has been clearly proven that the immature dam is the most detrimental to progeny. The continued use of immature sires and dams, especially where corn rations are fed, will seriously reduce both the size and vigor of any breed or class of live stock. Anything which lessens the size and vigor of the animal renders it less profitable on high priced land. Too much attention cannot be given to the importance of selecting breeding stock from mature parents. In this way, and only in this way, can we retain size and vigor in our herds and flocks.

The man who succeeds in breeding draft horses must ever keep in mind size, quality, feet, legs and action. These are all utility points. The markets demand horses weighing 1,700 pounds and upwards that have good body conformation, large feet of good texture, strong, clean bone, large, sound joints, heavy muscular development combined with good, straight, snappy action. Such horses command high prices and are very scarce. The statistics for the year 1911 show that only one horse, out of every twenty, sold at our leading horse markets filled the bill. This is surely a good line of work to pursue for many years to come. The vast majority of our farmers make a serious mistake when they sell their good draft mares to go to the cities. A good draft mare is worth

twice as much on any farm if she is used for work and breeding purposes, as she will sell for in any horse market. Only mares of good, weighty, body conformation and absolutely sound should be retained for breeding purpose. It is also very important that the stallion should be sound, drafty, stand well on his feet and legs, short and straight in the back, heavily muscled and show good disposition as indicated by width and flatness of head between the eyes. Avoid unsound, small footed, light boned, crooked legged or shallow bodied stallions.

The profitable beef animal of the future must have size, large heart girth and middle, giving him constitution and capacity. He must also be low set, straight in his lines, heavy in the quarters, wide in the back and loin and carry a good covering of natural flesh over these parts. The head must be short and wide between the eyes, the neck short and shoulders smooth on the sides and wide on top. Width on top of the shoulders goes with good fleshing properties throughout. The hide should be soft and pliable. These are all utility points.

We must ever keep the block type in mind, because the block is the ultimate end of all beef cattle.

In selecting dairy cattle it is always difficult to judge accurately with the eye. The real test must be the weigh scales and the Babcock tester. The cow is a machine to convert food into milk; thus she must have a large middle and a strong constitution to insure best results. She must also have a large udder, large milk wells, large crooked milk veins and good sized teats. Her head should be lean and angular in appearance with the eyes standing out prominently. The neck should be rather long and lean in appearance, the shoulders pointed and the back bone rather prominent. The skin should be loose and soft to the touch. In selecting herd bulls, either mature animals which have already demonstrated their worth as sires or younger animals from high testing dams and sires, only should be used. Remember that the best and surest result will always follow the use of a mature sire which has sired heifers with good records. A good dairy bull should be kept until he is twelve or fifteen years old. Real good sires are so rare that when we do find one, he should die only of old age. All breeders of dairy cattle should secure yearly tests on each and every cow in the herd. Shorter tests do not really mean

very much. It is the cow that stays by her job that is really valuable.

Few lines of work offer greater financial returns for the capital invested than a good flock of breeding sheep. This is especially true when good mutton conformation is combined with a long, dense, fine fleece. The question of constitution is very important in sheep. In selecting rams, blockiness, lowsetness, wide backs, loins and heavy, well-filled hind quarters should always be demanded. The head should be broad and masculine in appearance, the neck short and the shoulders broad and compact. The legs should be short and straight, especially at the hocks. The skin should be pink in color and the fleece long, dense, fine and uniform on all parts of the body. Too much attention cannot be given the importance of density of fleece. It insures a heavier clip of wool, protects the sheep from rain, snow and cold weather and also sheds chaff and other foreign material so detrimental to the wool.

Breeders of hogs will do well to pay more attention to the utility end of the business and much less to the fad end as illustrated by the pedigree craze, shape of head, ear, nose, dish of face, etc. The one great need today in the hog business is a hog with size, quality and prolificacy combined with early maturity. Such a hog is best described as the kind that never lies to the assessor; that he is born after the assessor is around this year and marketed weighing 300 pounds before the assessor comes back next year. Some such

hogs may be found in almost any of the well known breeds. With careful selection and judicious mating it is surprising how rapidly this type can be revived. In addition to the evil results of "faddism," the exclusive of a corn diet and the policy of breeding from immature sires and dams, have been detrimental both from the standpoint of size and prolificacy. It has been clearly proven by experimental work that pigs from young sows are inferior in every way to those from mature sows. The continued use of young sires and dams, especially when associated with corn feeding, will cause marked deterioration in any breed of swine.

In selecting breeding swine attention must be given to size, quality, strength of bone, evenness of fleshing and the use of more mature boars and sows. All pigs intended for breeding purposes should be selected from well developed mature sows. If the sires are mature animals so much the better. The pigs should be fed on rations calculated to produce bone and muscle, not fat alone. In this way we could materially improve our swine herds without changing breeds.

In conclusion I wish to once more emphasize the importance of "utility" in all classes of stock. Beware of "faddism" in any of its various forms. Demand masculinity in the sires and femininity in the dams. Also remember that the best results can only be obtained where careful selection is combined with intelligent mating and the proper feeding and management of the animals.

Cutworms

In Bulletin No. 70, issued by the Department of Agriculture, Ottawa, Mr. A. Gibson, chief assistant entomologist, gives the following interesting information on the cutworm:

Cutworms cause more widespread injuries and are responsible for more inquiries on the part of farmers, market gardeners and others who cultivate the soil, than most classes of injurious insects. Taking them as a class they rank in importance with such well known pests as the San Jose Scale, the Codling Moth and the Hessian Fly—all of which are among our most destructive insect enemies. There are certainly few insects which, year after year, do such widespread damage to garden and field crops as the various cater-

pillars known commonly as cutworms. The annual loss occasioned by these insects in Canada amounts to hundreds of thousands of dollars. In one year (1900), the Variegated Cutworm alone destroyed in British Columbia crops to the value of \$168,000, and, if we add the losses in the same season in Manitoba and Ontario, the figures would easily reach \$200,000. Chittenden has estimated that the total damage caused by this cutworm in the above year in the United States and Canada amounted to the enormous sum of \$2,500,000.

The moths of these cutworms belong to the family Noctuidæ, of which in North America there are over two thousand different kinds. In Canada, fortunately, not more than about

twenty of these have every appeared in numbers, as cutworms, to do serious damage to growing plants. The moths in general, are similar in appearance, being of a grayish, or dull-brownish color, the front pair of wings being usually crossed with four or five irregular lines. On each of these wings, also, are two characteristic marks, the one nearest the body, about half way down the wing, being round or orbicular in shape, and the other nearer the tip of the wing, larger and reniform, or kidney-shaped. In size, they expand from about an inch to two inches in width, when the wings are spread. When at rest the wings lie folded over the body. Being nocturnal in habit, they are seldom seen during the day time, but in the early evening they appear in search of the nectar of flowers. They are readily attracted to lights, and, for this reason, the bright lights such as are used along the city and town streets, are often visited by entomologists for the purpose of securing the moths for study. At night the eyes of these moths shine brightly and owing to this and their nocturnal habits, they were given the popular name of "owl-moths."

The eggs of these moths are, in general, similar in appearance, being pale in color, dome-shaped and less than one millimeter in diameter. If examined under a lens they are seen to be beautifully ribbed, the ribs being joined by indistinct cross-ridges.

Injury by cutworms is mostly effected in spring, when plants are young and succulent, but there are a few species which occur in destructive numbers as late as the middle of summer. As a rule, however, cutworm injury ceases before the end of June. As their popular name indicates, these caterpillars have the habit of cutting off the plants, during the night, near the surface of the ground, or a little below it. When they are present in numbers in a garden or field the plants will soon be seen to have been cut, or eaten off, and if an examination is made, the cutworm will most likely be discovered in the soil, coiled up, and just below the surface. In many instances the young plant will be found to have been drawn partly into the ground. Not all cutworms, however, feed in this manner; some climb up into fruit trees or such plants as currants, gooseberries, tomatoes, etc., and feed upon the foliage or the fruit. In fact, when they are excessively abundant, they will attack anything green and juicy. In such years some kinds assume the marching habit,

so characteristic of the army-worm. In seasons of severe infestations it is often necessary, unless the proper precautions are taken, to resow, or replant a second, or even a third time, before a crop can be secured.

As cutworms vary considerably in the time of their appearance in the different stages—eggs, larva, pupa and adult—and as such appearance, too, is often irregular from year to year, it is not possible to state their life-history in general. Some pass the winter in the pupal state, or as half-grown caterpillars, and others in the egg or adult state. The moths of the chief injurious species appear in June, July and August.

The eggs of cutworm moths, as a rule, are laid in clusters or masses on the leaves of trees, shrubs, weeds and grasses, etc. They have even been found on window panes and on the putty, as well as on clothes which have been hung out to dry. In the case of the Variable Cutworm, *Mamestra Atlantica* Grt., we have found the eggs on the upper surface of a honeysuckle leaf, in a compact heap of three layers. Another species (in confinement) laid eggs singly or in clusters of from 3 to 20. The number of eggs laid by a female varies considerably. In some clusters there will be less than one hundred eggs, in others over 700; in fact, a female of one species is known to have laid over 1,000 eggs. The eggs of most of these moths are laid in early or mid-summer. Those of some species, however, may be deposited as early as the end of April.

When a cutworm become full grown, it enters the earth and makes an earthen cell in which it changes to a brownish or dull reddish pupa, and when this happens in June or July the moth usually emerges in about two weeks' time. Some cutworms, however, do not change to pupæ immediately they complete their earthen cell, but remain as larvæ for some days, the actual period often varying, and the moths in such cases do not emerge for three or four, or even more weeks, from the time the caterpillar became full-grown and entered the earth.

There are many different kinds of beneficial insects which prey upon cutworms and help very materially to keep these pests in check. Some of these are parasitic insects, laying their eggs upon the bodies of the cutworms. These eggs hatch and the young maggots or grubs feed internally upon the living caterpillar until they have ultimately destroyed it. Others are predaceous and are

constantly hunting for cutworms to devour. One of the most important of these latter is the Fiery Ground Beetle, *Calosoma calidum* Fab., the grub of which is known as the Cutworm Lion. This beetle, both in the adult and the grub state, destroys large numbers of cutworms. It is brownish-black in color with three rows of coppery red pits on each wing cover. In length it is about seven-eighths of an inch. Another important enemy is the black Ground Wasp, *Ammophila luctuosa* Smith. This wasp digs the cutworms out and stores them in its nest as food for its young grubs.

In addition to the parasitic and predaceous insects which destroy cutworms, some of our native birds are very fond of this fat, juicy caterpillar. The value of many of our wild birds as insect destroyers, should be more and more recognized, and farmers, gardeners, etc., should do all they possibly can to protect them from being shot and their nests from being robbed. The Meadow Lark, Blue Jay, Catbird, House Wren, etc., destroy every year large numbers of cutworms. Even the much-abused Crow is extremely valuable, as insects constitute its principal food during spring and early summer, and of the insects eaten, cutworms form a most important part.

Parasitic fungous diseases, such as species of *Empusa*, help to reduce outbreaks of cutworms. These caterpillars are also subject to bacterial diseases.

PREVENTIVE MEASURES.

The eggs of most of our cutworm moths are deposited soon after the adult insects appear in early or midsummer. As these clusters of eggs are laid chiefly on weeds, or other nearby succulent vegetation, or upon the remnants of crops, it is most advisable to plough deeply in the early fall, all fields where cutworms have been troublesome. Such clean cultivation not only destroys many of the eggs and the young hibernating cutworms, but also numbers of other insects which winter beneath fallen plants, refuse, etc. Fall ploughing should always be practised where circumstances will permit, not only for the destruction of hibernating insects, but also because the land will be put into better condition for early spring sowing. In gardens and orchards all remnants of crops or other refuse, should be carefully gathered together and destroyed by burning. When such cleaning up is done as soon as possible after the crop is removed, useless plants which

would be suitable for the moths to lay their eggs upon are removed.

In fields or gardens where such plants as cabbages, cauliflowers, tomatoes, etc., are set out, protection against cutworm attack can be had by placing a band of tin, or wrapping a piece of paper, around the stem of each plant at the time of setting out. Tin, of course, lasts longer than paper, and is, therefore, to be preferred. Pieces of tin about six inches long and two and a half inches wide are sufficiently large for this purpose and can easily be made into a cylindrical shape by bending them around a broom handle. Old tomato, or other tins in which canned vegetables have been preserved, are useful for this purpose, and if thrown into a bonfire the tops and bottoms fall off, leaving the central piece of tin which, if cut down the middle, will be sufficient for protecting two plants.

To protect fruit and other trees from climbing cutworms a band of cotton batting four inches in width may be fastened tightly around the tree near the bottom. The wire or strong string holding the cotton batting should be placed near the lower edge, so that the upper part of the band can be hung down, thus making a sort of funnel, or cone-shaped mass of batting.

REMEDIAL MEASURES.

The poisoned bran remedy is the one which is now used most extensively for the destruction of cutworms generally. This is made by moistening the bran with sweetened water and then dusting the Paris green in the proportion of half a pound of Paris green to fifty pounds of bran. It is important that the bran be noticeably moistened (but not made into a mash or moistened too much to prevent it being crumbled through the fingers) so that when the poison is added it will adhere to practically every particle. One half a gallon of water, in which half a pound of sugar has been dissolved, is sufficient to moisten fifty pounds of bran. If more convenient the same quantity of salt may be used instead of sugar, or even molasses may be employed. The mixture should be applied as soon as cutworm injury is noticed. It is important, too, that the mixture be scattered after sundown, so that it will be in the very best condition when the cutworms come out to feed at night. This material is very attractive to them and when they crawl about in search of food they will actually eat it in preference to the growing vegetation. If the

mixture is put out during a warm day, it soon becomes dry, and is not, of course, as attractive to the cutworm. From fifty to one hundred pounds of poisoned bran is sufficient to treat an acre, the actual amount depending upon the closeness of the plants. In fields, where standing grain is attacked, the mixture may be distributed by means of a wheel seed-er, or it can be thrown from a wagon, by means of a shingle, to a distance of twenty feet. In large fields of such plants as beets, the mixture may be distributed on the surface by means of a beet drill, the spouts of which should not be allowed to become clogged, or it may be spread by hand. In Southern Alberta where cutworms often do very serious damage in fields of beets, it has been found that a 16 year old boy can apply the bran to eight or ten acres in a day, and in such crops some growers have found it necessary to use only from twenty to thirty pounds of mixture to the acre. The method is to have a sack filled with the bran, hung about the neck, and by walking between two rows, and using both hands, the mixture may be scattered along the row on either side. When cutworms are so numerous as to assume the walking habit, the poisoned bran may be spread just ahead of their line of march. In gardens, where vegetables or flowering plants are to be protected, a small quantity of the material may be put around, but not touching each plant. Where rows are to be treated, it can be quickly placed in the manner described above by walking down between the rows.

Fresh bundles of any succulent weed, grass, clover or other tender vegetation, which has been dipped into a strong solution of Paris green (one ounce of Paris green to a pail of water), may be placed at short distances apart in an infested field, or between rows of vegetables or roots, and will attract many cutworms and protect the crops from further injury. These bundles, also, should be put down after sundown, so that the plants will not be too withered before the cutworms find them. As in the case of the poisoned bran, they should be applied just as soon as the presence of cutworms is detected.

The above poisoned baits have given excellent results for all surface feeding cutworms. For such cutworms, however, as the Glassy Cutworm, which feed almost entirely underground, these baits are, of course, of little value. For such cutworms it is important to keep the land to be used for small grain

crops the following year as free as possible from long grass and weeds. Prairie or sod land which is to be broken for seeding the next year should be fed off as late as possible or mowed before breaking. If this is done there will be no tall vegetation to attract the female moths for the purpose of egg-laying.

As a rule when cutworms assume the marching habit, they are nearly full-grown, and, of course, very ravenous. In such instances, as has already been mentioned, applications of poisoned bran have been extremely useful in stopping the attack. Severe outbreaks may also be largely controlled by ploughing deep furrows in advance of the line of march of the cutworms. The progress of the caterpillars is thus stopped and when a furrow is entered by them, a log drawn by a horse may be dragged through it and the cutworms in this way will be crushed and killed. If a series of post holes, about a foot deep and about ten feet apart are dug in the furrow, hundreds of the cutworms will fall into them and they can be easily killed by crushing them with the blunt end of a post, or a piece of fence rail.

In small gardens, as soon as cutworm injury is noticed, the culprits can, as a rule, be easily located in the soil, about an inch or so beneath the surface and within a radius of a few inches of the plant, and destroyed by hand. Such handpicking should, of course, be always practised whenever a plant is seen to have been cut off. Where such a species as the Variegated Cutworm is occasionally troublesome in greenhouses, the simple method of digging them out by hand has given relief.

Flocks of chickens, turkeys or other poultry, are useful in outbreaks of cutworms, and if turned into infested fields or gardens will soon find and devour not only many of the caterpillars but also the pupæ.

MUSHROOMS.

The ordinary commercial mushroom (*agaricus campestris*) may be recognized by the creamy white under surface of the cap, which turns to a light pink as the plant matures.

The common causes for failure in mushroom growing are the use of poor spawn or spawn killed by improper storage; spawning at too high temperature; too much water at spawning or later; and improper preparation of the bed. One of the first requisites is

fresh, reliable spawn. This can be obtained from reliable seedsmen or from certain mushroom spawn dealers in different parts of the United States and Canada. The usual price is \$2 for enough spawn for 30 square feet.

Mushrooms may be grown in a shed, cave, cellar or any vacant space in a greenhouse, if the temperature and moisture conditions are favorable. The temperature should range from 53 to 60 degrees, 55 to 58 degrees being best. The place should not be very damp, though a moist atmosphere is desirable. Cold is less injurious than heat. That is why so many mushroom houses are built half below the ground, so that there is less trouble in keeping down the temperature. Mushrooms are usually grown in early spring or summer, and in the fall and early winter, but in proper houses they may be produced the year around. The color of the product is much improved by darkness, but a little light may be allowed to harvest the mushrooms and work in the bed.

The manure must be in the primary stage of fermentation, and should not contain more than a moderate amount of straw or such substitutes as sawdust or shavings. It should first be piled in a heap three or four feet high, and if dry should be watered slightly to start fermentation. In four or five days it should be turned, and again in seven or ten days to permit of even fermentation and prevent burning in spots. In fifteen days or three weeks the temperature will begin to fall and it will be ready for use.

The beds are usually three and a half by four feet and ten or twelve inches deep, with boards outside to hold the manure. The compost should be just moist—a state when water can not readily be squeezed out. Layers of four to six inches should be put in and packed slightly. The temperature should be allowed to fall to 75 degrees before the spawn is put in.

Commercial spawn comes in bricks which are cut or broken into two inch squares, ten or twelve pieces to the brick. These are put ten inches apart, an inch under the surface of the manure. It is usually unnecessary to water the beds after spawning, which almost invariably damps off the young spawn. If in two weeks there are no white threads in the manure about the spawn a layer of loam, not too heavy nor too light, about an inch and a half deep, may be spread over the

surface. It should be barely moist, to prevent the bed from drying out.

When the mushrooms appear the bed may be sprinkled lightly once or twice a week, but never soaked. The walks and walls of the house may be watered to keep the atmosphere moist. The mushrooms usually appear some six weeks after spawning. In picking the cap, or cap and stem, should be grasped and twisted to remove it easily from the soil. All defective ones and the small "buttons" should be removed. Shipment is made in small boxes similar to strawberry boxes, or in cardboard boxes holding two to five pounds, often lined with paper to keep the mushrooms in good condition. The market price ordinarily averages thirty-five to fifty cents a pound, and sometimes goes up to seventy-five cents.

The bed will produce successfully from six weeks to three months, many growers figuring the profitable yield to be half a pound to the square foot of surface. Many get two pounds to the square foot. When a bed is no longer profitable, the manure may be used for garden purposes, though useless for mushrooms since the heat is exhausted. The house should be thoroughly cleaned before another crop is raised.

HONESTY.

In a burst of penitence little Freddie was telling his mother what a wicked boy he had been.

"The other day, mamma," he said, "I found the church door unlocked and I went inside. There wasn't anybody there and I—"

"You didn't take anything away, did you, son?" she asked.

"Worse than that; I—"

"Did you mutilate the hymn-books or play any tricks of that kind?"

"Oh, lots worse than that, mamma," sobbed Freddie. "I went and sat down in the amen corner and said 'Darn it.'"

LET THEM DO IT.

A farmer's wife who had no very romantic ideas about the opposite sex, and who, hurrying from churn to sink, from sink to shed, and back to the kitchen stove, was asked if she wanted to vote.

"No, I certainly don't!" she said. "I say if there's one little thing that the men folks can do alone, for goodness' sake let 'em do it!"



KING GEORGE V.

Editorial

"AMERICAN" SETTLERS

During election times and other political disturbances in the Prairie Provinces, we hear a good deal from certain professional politicians and party newspapers about the number of "Americans" entering Manitoba, Saskatchewan and Alberta; and the influence of the "American" and "foreign" votes. While the term "American" applies to all the people of this continent, the same as "European" applies to the various nationalities of Europe collectively, in the case in point, it is usually employed in referring to people from the United States.

It is to be regretted, too, that either for political effect or through ignorance, these people are sometimes referred to by partisan speakers and newspapers, as a menace to the solidarity and national unity of the Dominion, through their alleged sympathy with United States institutions and form of government.

He must be a very indifferent student of world movements in recent years, who fails to read the "writing on the wall" which plainly indicates to the English-speaking peoples that, self-preservation, the future of our race, and the welfare of mankind generally, demand that they present a united front to the rest of the world. And, moreover, in order to do this, that all international differences must be amicably and peacefully adjusted, is the confessed opinion of the ruling minds in all the English-speaking nations at the present time.

Reasonable territorial limitations has always produced the most stable nations in history, and decentralization of government has proved the greatest factor in the success of the British Empire.

To say that the "American" settler is a menace to Canada, is doing him an injustice and is just as absurd as to say that the Canadian settler is a menace to the United States. Men who voluntarily emigrate to a new country usually do so for the purpose of bettering their condition, and as a rule rapidly become attached and loyal to the institutions and government of their new home. The average settler soon learns that we enjoy absolute self-government, and a larger measure of civil and

religious liberty than the original thirteen colonies fought for. He knows that part of the same sturdy stock that founded the United States also laid the foundations of the Canadian nation, and while it has taken us more than a hundred years to do what they did with the revolutionary war, we have done it better, without bloodshed and without a rupture with the Mother Country.

The cool, calculating, businesslike "American" settler, quickly perceives that the government, and the administration of law and order, in Canada, is on a higher standard than the United States (God forbid that the present tendency of political warfare should lose for us that proud distinction) and he is not backward in expressing his admiration of these and other outstanding features of the great Northland. Our institutions being similar to those under which he formerly lived (the difference being largely in administration) he rapidly and quickly becomes a useful, enthusiastic and loyal Canadian citizen; and it is our duty to give him a cordial welcome. We are not speaking of the offensive, know-it-all class, who do not all come from the United States, but of the average settler from the south in our prairie country, of which we have knowledge.

And who are these "American" settlers, that a few irresponsible politicians and newspapers profess to be afraid of? Perhaps twenty-five per cent. of them are of the practical, enterprising, Yankee farmer class, with sufficiently large families to indicate a fair standard of morality. And the other seventy-five per cent. are Canadians and their descendants, coming back to take their part in the development of our great heritage and improve the opportunities that a slumbering nation denied them twenty-five and thirty years ago.

Have we not spent money to turn this tide of humanity northward? Have we not patiently waited for years to see the harvest and longed for this very movement? Then, let us "kill the fatted calf" and rejoice, for, as Cy Warman would put it:

"There's a shuffling on the border

"With their toes the other way,

"They're coming back to Canada,
 "They're coming back to stay."

It is not the intelligent, educated white man, with a little money, a family and an ambition to be somebody, that will ever be a "menace" to this country, and the critics above referred to might serve their day and generation better by facilitating the work of getting just such people comfortably located on our public lands. A prosperous, satisfied settler is worth more to the country than tons of immigration literature; and the duty of our government and public-spirited citizens is to take up the burden of nation building in real earnest, by making happiness and contentment available to the honest and hopeful immigrant. Produce these conditions and the problem of converting our alien population into good Canadian citizens is solved.

marks of Dr. Max Nordau, of London, England, will bear reflection. In a recently published article, Dr. Nordau says:

"In ever greater numbers the population makes its way from the country to the town, to exchange agricultural occupations for labor in workshops and factories. The number of people that dwell in towns of over 100,000 inhabitants is everywhere swelling; everywhere among civilized nations the tendency appears to transform a people that lives on land and raises natural products into a people of great cities, producing differentiated goods.

"The process produces wealth and the world economy sets this on a level with happiness—a manifest illusion.



A PROSPEROUS FARM SCENE

DANGERS OF LIFE IN CITIES.

The subject of race degeneration through the abnormal growth of cities at the expense, in population, of the rural communities, has been touched upon from time to time in *The Fruit Magazine, Scientific Farmer and Canadian Citizen*, and we propose to keep at it until something substantial is done to improve conditions in the country, so as to make it not only pleasant and profitable to those already there, but attractive to many seeking relief from the overcrowded cities. In the meantime, a few quotations from the re-

"Extreme state intervention in the sense of the Socialistic programme would rescue the individual from the overexertion and fatigue that make him a progenitor of degenerates.

"Since, however, it seems chimerical to look for a realization of the integral Socialistic programme at any date to which we can now look forward—modest tentative measures like Mr. Lloyd George's old-age insurance are of no efficiency—we must regard this theoretically conceivable remedy for degeneration as practically inapplicable.

"The large town gives the highest percentage of crime, insanity and constitutional diseases; the large town is the focus of all the frenzies of fashion, all hysterical aberrations of public opinion, all Anarchical movements in politics, social customs, morality. It is in the large town that celibacy and childlessness are most to be found.

"The stunted forms that we meet in the slums of the East and Southeast London are the descendants of the gigantic peasants of Saxon Sussex, of Danish and Norwegian Hertford, of Jutic Kent and of Anglician Northumberland. In the large town families which have originally the finest constitution disappear in four or five generations if they are not renewed by a continual infusion of fresh blood from the country.

"In London and Paris—the young cities of America cannot here come into question—there are probably not a hundred persons who can show a pedigree of 150 years consisting on both sides of ancestors born in London or Paris.

"The large town is an abyss in which the population that pours in from the whole country and from foreign lands comes and trickles away.

"But for that inflow from without it would be extinct in about a century and a half, since its population is now renewed out of its own resources. For the present the country population is now renewed out of its own resources. For the present the country volution is still capable of feeding the large towns.

"But the day will come when the depopulated country will have no more reinforcements to bestow on the great city, and then the danger of national degeneration will have come very near to us. This danger will be European in its scope, since one people after another is adopting the large town civilization and the white race has no more barbarians in reserve to step into the weakened ranks and fill them up.

"In the stress of intensive modern culture the peoples that take the lead must needs

wear themselves out. They cannot at the same time be rich and able, shine and endure, but only the one or the other."

We have no desire to appear pessimistic or to ignore the silver lining to a dark cloud, but the truth of Dr. Nordau's remarks should not be denied in order to bring a comfortable feeling to ourselves.

If Canada would avoid the pitfalls in the way of her national greatness, she should take prompt measures to prevent the physical degeneration of her people.

AIR-LIFT PUMP.

For some years experiments have been going on with a new system of lifting water by means of a revolving drum, with coils of piping inside, into which air and water are taken alternately with each revolution and subsequently discharged into a vertical pipe.

By this means the sections of air successfully lift the sections of water one foot (vertical) for every four feet of coil in the drum.

A representative of *The Fruit Magazine*, *Scientific Farmer* and *Canadian Citizen* had the pleasure of inspecting a small machine of this type recently in actual operation near Vancouver. In the case in point paddles had been attached to the outside of the drum, which was being driven by the force of the current in the Capilano river and lifting water some sixty feet, without the expenditure of any other mechanical power whatever.

The system is novel, but the principle is undoubtedly sound, and promises to revolutionize the lifting of water, in many instances making the irrigation of lands possible where no gravity system is available. In this invention the natural forces of air and water are utilized to great advantage in a new and thoroughly practical manner. Simplicity is its strongest feature. On another page we show a cut of the machine in operation on the Capilano river. We understand that a factory will soon be established in or near Vancouver for the manufacture of this machine, which is called a pump, but which in reality might be more appropriately named an air water-lift.



AIR-LIFT PUMP

MIDSUMMER FAIR.

The strong representations made and assistance given by special committees on the Vancouver Exhibition executive has resulted in a far larger number of entries for the fruit and agricultural displays at the midsummer fair, which will open on August 10 and continue until August 17.

Entries for the plate displays and several

varieties of the commercial fruit exhibit have been coming in regularly during the few weeks previous to the opening of the fair, and it is confidently expected that these will be greatly augmented. Of course, on account of the fair being held so early in the season it is impossible to secure a great many of the varieties of late Fall and Winter apples which it might be possible to show at a fair which is held later in the year, but it is

a fact that nearly every variety grown in British Columbia and possibly a few more will be shown at the summer fair.

The efforts of the manager in regard to the district displays of agricultural, horticultural and fruit products are now being seen and a number of these fine combined displays will be present at the fair. The prizes of \$400, \$300 and \$200 offered with diplomas are an incentive, and a further donation of \$100 each is made to every district for the purpose of assisting in the gathering and arranging of the display.

Three weeks before the opening of the fair every inch of space in the building was allotted to exhibitors and a number of others arranged for the placing of a large tent on the grounds.

Announcements re New Westminster, B. C., fair will appear next month.

A SPLENDID NUMBER.

The "Canada" Newspaper Publishing Co., Ltd., of Kingsbury House, London, W. C., England, and Aberdeen Chambers, Toronto, Ont., have issued a special number entitled "Canada Today," a copy of which has just reached our office.

The book consists of 236 pages, beautifully illustrated and filled with statistical information about Canada of the most valuable character. It is a marvel of typographical excellence and no flatness in its contents. There are six well-printed maps of the Dominion and provinces, and the publication opens with an introduction setting forth what Canada offers to the newcomer, and some analytical particulars as to our area, growth, revenue and trade. Successive pages are occupied by such subjects as "Canada and Canadian Affairs in 1911," "Canada and Her Future," "The Dominion General Election," etc. Various aspects of Canadian progress are intelligently dealt with. A picture of interest is a double-page collection of medallion portraits of the present Cabinet. The lavish use of fine half-tones makes the work one of interest to every reader, and these lead the way to the attentive perusal of its letterpress.

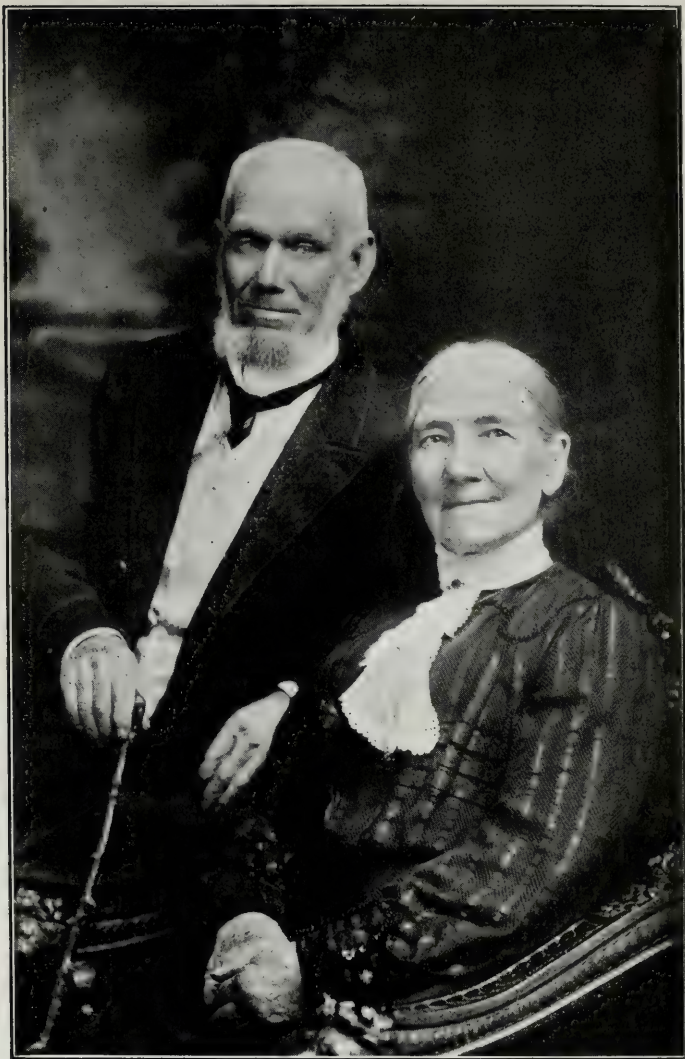
The book may be had for the very moderate sum of 75c, including postage.

"BACK TO THE LAND!" THE LESSON OF A FAMILY HISTORY

Governments of various countries have issued "blue books" by the ton dealing with the problems of Health, Insanity, Poverty, Pauperism and Crime. Learned Societies, Leagues, Organizations, as well as patient individual investigators by the thousand have issued Reports and Pamphlets, and delivered Lectures, Speeches and Sermons by the mile dealing with "heredity" and "environment"—and to come to a conclusion on the whole matter, the moral is that the people must get "Back to the Land"—for the evils of crowded city life lead to moral and physical degeneration. Some years ago the great publishing firm of Cassell issued, in connection with their "Popular Educator," a pictorial advertisement which attained a world-wide celebrity. "The child—what will he become?" was the question asked. A child, innocent, bright, beautiful, was depicted and then a row of figures showed the effects of squalid surroundings, drink, poverty, until the bright boy sunk into degraded and miserable old age. Another row of figures showed "the child" developing under the wholesome influences of fresh air, healthy employment, until love, honor, competence and troops of friends accompanied the frosty but kindly old age which comes as the evening of a well-spent life.

We are able to give in this number of the *Fruit Magazine, Scientific Farmer and Canadian Citizen* the story of Mr. and Mrs. Edward Noble, a venerable couple now residents in Vancouver, after lives spent in honest labor in the rigid but glorious Canadian climate. The simple annals of this honest, hard-working couple are more eloquent than scores of government reports—they will prove that blessings accompany a life spent in husbandry, among wheat, and "the kindly fruits of the earth," more than columns which we could write about wheat fields and fruit farms. There is no need to add to or philosophise on their story—the illustration we give with the accompanying brief explanation tell their own story.

During the month of July Vancouver, B. C., was the scene of a very remarkable gathering. Mr. and Mrs. Edward Noble, in the midst of their children, their grand children and a host of friends, celebrated the sixtieth anniversary of their wedding. It does not fall to the lot of many to hold "Diamond Wedding Celebrations." Mr.



MR. AND MRS. EDWARD NOBLE

and Mrs. Edward Noble celebrated the fiftieth anniversary of their wedding in Ox-bon, Saskatchewan. They were married on the 31st of March, 1852, in the township of Walcum, then in the County of Simcoe, now called Dufferin. The diamond wedding celebration was postponed until this July in order that the family might all be gathered together.

Let us return to the Fiftieth Anniversary for a moment in order to recall the golden wedding of Mr. and Mrs. Samuel Carter Hall, the celebrated author. On that occasion Mr. S. C. Hall addressed to his wife

a charming poem, which may be quoted here as applying equally well to Mrs. Noble:

A GOLDEN WEDDING.

Yes! fifty years of troubles, come and gone,
I count since first I gave thee hand and heart!

But none have come from thee, dear wife,
not one!

In griefs that saddened me thou hadst no part—

Save when, accepting more than woman's share

Of pain, and toil, despondency and care,
My comforter thou wert, my life my trust!

Ever suggesting holy thoughts and deeds.
Guiding my steps on earth, through blinding
dust,

Into the Heaven-lit path that Heavenward
tends.

So has it been, from manhood unto age,
In every shifting scene of life's sad stage—
Rejoicing in the wife and friend to find,
The woman's lesser duties—all—combined.
And if the world has found some good in
me,

The prompting and the teaching came from
thee!

God so guide both that so it ever be!

So may the full fount of affection flow;
Each loving each as—fifty years ago.

We are going down the rugged hill of life,
Into the tranquil valley at its base;

But, hand in hand, and heart in heart, dear
wife,

With less of outer care and inner strife,
I look into thy mind and in thy face,

And only see the Angel coming nearer,
To make thee still more beautiful and
dearer.

When from the thrall and soil of earth made
free,

Thy prayer is heard for me—and mine for
thee!

Between the fiftieth anniversary of their wedding and the sixtieth anniversary of the same event, Mr. and Mrs. Noble removed from the east to Vancouver. On the 12th of July, 1842, Mr. Edward Noble walked with the Rosemont Lodge of Orangemen and on July 12, 1912, he was hale and hearty enough to march with the Orangemen in New Westminster. This seems a unique record and a proof of the sturdiness of the men of the East.

On the occasion of this Diamond Wedding friends of the family gathered from near and far. A son came from distant Pittsburg and relatives came from places equally distant.

Sixty years ago Edward Noble took his young bride into the nest he had built for a home in what was then a wild part of Ontario. For forty years the couple lived in their first home and here a family of twelve children were born, all but one alive, well and prosperous today. Hard work, temperance and "goodliness" have characterized

the family. One son has become a minister, and as the Rev. G. G. Noble, of the Pittsburg Conference of Methodists, has achieved a worthy reputation.

Mr. Edward Noble and his wife have been staunch Methodists, and now in his 84th year the Old Worthy walks on Sunday to his church a journey which would do credit to the prowess of a young man.

One by one the members of the family left the old roof tree, and about twenty years ago the old home in Ontario was sold—the old couple coming further west, and three years ago they built themselves a home in a charming suburb of Vancouver, with their daughter Alice, the only unmarried member of their family, to keep them company in the charming house, now smothered in roses.

Their diamond wedding was an event which created widespread interest, for through their many family connections they have troops of friends. There was a boat picnic to Bowen Island, and enough members of the old Oxbow Band were gathered together to supply excellent music at the "At Home." Guests to the number of some two hundred were entertained, and the happy old pair were the recipients of presents, letters and messages from near and far.

As the records of such a family are of historic interest, let us here state that Mr. Edward Noble is a native of Tyrone, Ireland. Mr. and Mrs. Noble were married on March 31st, 1852, in the township of Newburn, in the county which is now called Dufferin.

The sons are A. B. Noble, C. E. Noble and Winstow A. Noble of this city; Robert J. Noble and John Wesley Noble of Oxbow, Sask., and Rev. S. G. Noble, pastor of the Methodist Episcopal church, McKiesport, U. S. The daughters are Mrs. Wm. Marshall, Toronto; Mrs. Wm. Robinson, Stoughton, Sask.; Mrs. W. H. Jones, Avala, Sask.; Mrs. E. J. Coade, Carrievale, Sask., and Miss Alice S. Noble, who resides at home with her parents in Vancouver.

And now what is the lesson of the simple annals of this Noble family—the pun which conveys a truth may be forgiven. The lesson is that in this land of golden opportunities honest hard work can win competence and comfort for old age—competence and comfort for a man's children and children's children. The lesson is that long ago taught by the Psalmist, "I have been young and now am old, yet never have I seen the righteous man forsaken or his seed begging their bread."



THE FAMILY GROUP.

Mr. and Mrs. Edward Noble, sitting. Their surviving children from left to right, according to age, Mr. A. B. Noble (eldest son), Mrs. Annie J. Marshall, Mr. J. W. A. Noble, Mrs. Lizzie Robinson, Mr. R. J. Noble, Mrs. Martha Jones, Mr. C. E. Noble, Rev. S. G. Noble, Mrs. Mary Conde, Miss A. T. Noble, Mr. W. A. Noble.

SUDDEN DEATH.

We do not usually write obituary notices, but the sudden death of Mr. Robert H. Agur, of "Balcomo," Summerland, B. C., Wednesday, July 17th, removes such a prominent and useful member of the fruit-growing family that we are constrained to express the keen regret felt by the public generally.

He was president of the British Columbia Fruit Growers' Association, vice-president of the Western Canada Irrigation Association, president of the Okanagan Fruit Union and a prominent fruit grower himself. He was one of those active business men who, on the advice of his physician, gave up city life for the country, and thus, doubtless, prolonged his life several years.

The late Mr. Agur, until his removal to British Columbia, about eight years ago, was one of the leading business men of Western Canada, having for years been associated with the Massey-Harris Company as manager of the Northwest department of that concern. He was born in 1856 in Oxford County, Ontario.

PLAGIARISM.

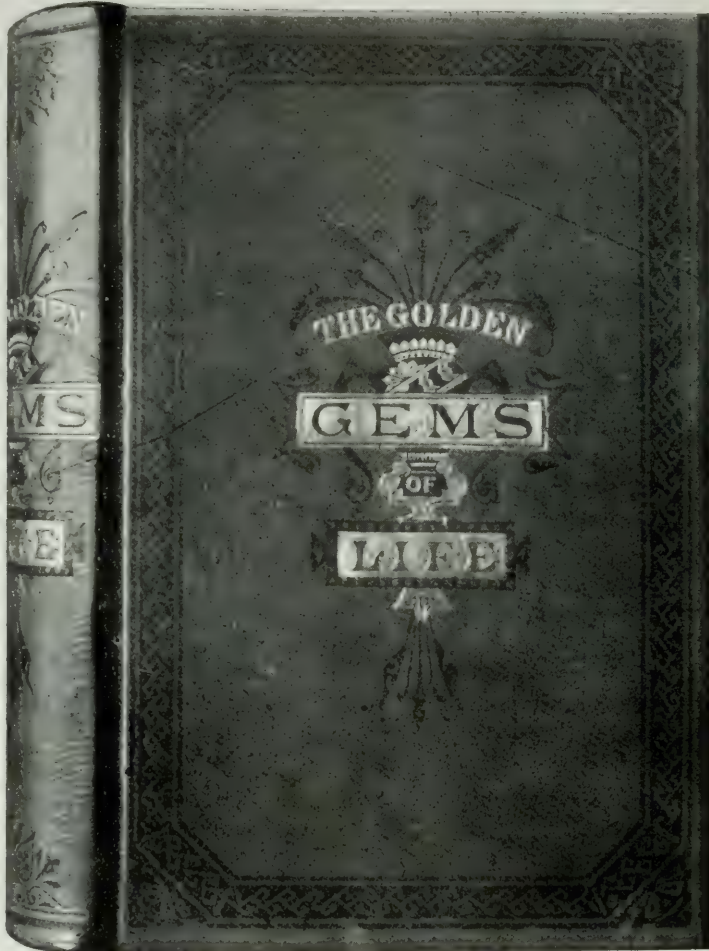
The editor of the *Westminster Hall Magazine* accuses us of plagiarism because we published an address delivered by Mr. B. Vincent Wardle, of Vancouver, on the subject of "The Spirit of Canada," in our June number, which had also appeared in his publication a short time previous, without giving the *Westminster Hall Magazine* credit for same.

If the editor in question will look up his "Webster," he will find that a plagiarist is "one who purloins another's writings, and offers them to the public as his own." The "article" in question was not a contribution to any publication, but an address, delivered in public, and reproduced whole, or in part, by a number of the daily papers, and when we gave the author credit for what we considered a very excellent speech on the subject, we had performed all the duties required by the ethics of journalism in such a case.

Inexperience doubtless led this young editor to overlook the fact that a public address is not the exclusive property of any publisher, and that no man has a monopoly on truth. Should the editor of the *Westminster Hall Magazine* ever produce anything original, worth copying, we shall be glad to give him due credit for it.

Golden Gems of Life

The Golden Gems of Life a half-size cut of which is shown here is one of the valuable *Premiums* now offered *free* to Canadian subscribers to THE FRUIT MAGAZINE, SCIENTIFIC FARMER AND CANADIAN CITIZEN, on conditions set forth on Page 20, of the *Advertising Section* of this number. This handsome volume contains upwards of 200 pages of highly instructive reading matter, beautifully illustrated with steel engravings and containing a chapter on every phase of human life. The book is printed on toned rose-tinted calendared paper, hand sewed and handsomely bound in silk-finish cloth, with gold and black stamp.



There are over a hundred subjects treated in this valuable book concerning life in all its bearings. These "Gems" have been gathered from all writers who have written on such subjects as: Infancy, Childhood, Maturity, Domestic Relations, Practical Life, Moral Duties, Sorrows of Life and Old Age—all are treated from ancient and modern Philosophers, Poets and Essayists, combining their choicest thoughts in one harmonious whole. See Page 20, of this number, for other particulars.



THE NOBLE FAMILY GROUP, INCLUDING MR. AND MRS. EDWARD NOBLE,
SONS, DAUGHTERS, GRANDCHILDREN AND GREAT
GRANDCHILDREN.

Canada

From "Canada Today, 1912"

"The land of sunshine and the land of snow, the land of freedom and the land of loyalty, the pride of the twentieth century, the gem of the British Crown," is the characterization applied to Canada by Sir Wilfrid Laurier, then Prime Minister of the Dominion, while in London last year at the time of the Coronation. And he justified his declaration in an eloquent passage.

WHAT CANADA OFFERS.

"Our doors," said Sir Wilfred, "are open to men of goodwill from all parts of the world. Not that we want to create the impression that Canada is an easy land to live in; that it is a land of perpetual sunshine; that milk and honey flow in its streets and in its rivers. We do not want to create such an impression. We say that Canada is a hard land—a land fit for hardy men. We do not want any kind of men in Canada except those who are willing to work with their brain and with their brawn. Such as these are sure, in coming to Canada, to meet with ample success. I think it is not claiming too much at the present time to say that there

is no part of the earth where labour is surer of a richer reward than the Dominion of Canada.

"What is it that we have to offer to the man who comes to Canada? We offer, in the first place, the British institutions, such as they have been made in these islands. Perfection is not of this world, as we know, but I think it may be said that British institutions are the most perfect that have ever been devised by man for the government of man. Those British institutions we have in Canada, and we cherish them as the very apple of our eye, and from them we would not part under any consideration whatever. What have we to offer them? We offer them good laws—laws that will make every man's life, property, reputation, and honour all the same. We offer them a code of laws which will give a man justice as he is entitled to justice—justice without fear or favour. What else do we offer them? We offer them lands—the best lands that are to be found today on the surface under the sun—lands that have been, ever since the Creation, only awaiting the tiller to smile and blossom at once. To

every man who comes to our shores, even if he has not a shilling in his pocket, we offer 160 acres of these lands, and if he has energy and enterprise, he is sure, in a very few years, of a competence for his wife and for his children. We offer them, besides, the grandest forests that remain on the surface of the globe. We offer them fisheries on Atlantic and Pacific unequalled in the world, minerals of all sorts—gold, silver, coal, iron—everything in the shape of minerals to be found on the face of the world is to be found in Canada.”

Sir Wilfrid Laurier's words will be found fully substantiated by the facts and figures presented in the succeeding pages of “Canada Today.”

CANADA'S AREA.

The most northerly portion of the mainland of the Dominion of Canada is in the same latitude as northern Norway, and its most southerly portion in that of northern Spain and Italy. Its total area exceeds three and a half million square miles—nearly equal to the area of Europe, and rather more than that of the United States, and no less than thirty-one times that of the United Kingdom. From Halifax (Nova Scotia), on the Atlantic Coast, to Vancouver (British Columbia), on the Pacific coast, is 3,656 miles by rail; from Victoria to the gold-mining centre of Dawson (Yukon Territory), on the Yukon River, 1,550 miles by ocean and river, steamer and rail; from Fort William (Ontario), on Lake Superior, by the waterway of the Great Lakes and the St. Lawrence River, to the tidal seaport of Quebec, 1,400 miles; and from Quebec to the extreme Atlantic coast, at the Straits of Beeleisle, 850 miles. Canada is computed to have a greater length of coast line than Great Britain and Germany combined, and some 3,000 miles of navigable lakes and rivers.

THE GROWTH OF THE DOMINION

The growth of the Dominion in various directions during the last thirty years is strikingly illustrated by the following table, compiled from official sources:—

	1881	1911
Estimated population	4,336,504	7,204,527
Chartered bank capital paid up.....	\$59,384,987	\$101,065,306
Chartered bank deposits	\$83,666,189	\$874,672,408
Saving bank deposits	\$23,522,560	\$83,511,461
Total revenue	\$29,635,298	\$117,780,410
Total expenditure..	\$25,502,554	\$87,774,198
Fire insurance in force	\$462,210,968	a\$2,034,276,740
Life insurance in force	\$103,290,932	a\$856,113,059
Mineral production ^b	\$10,231,255	a\$106,823,623
Post offices	5,935	13,324
Letters and post-cards sent	57,810,000	553,546,000

	1881	1911
Canal tonnage	* 3,229,077	a\$30,709,087
Railway Mileage ..	7,331	25,400
Railway earnings..	\$27,987,509	\$188,733,494
Railway freight (tons) ..	12,065,323	79,884,282
Railway passengers ..	6,943,671	37,097,718
Total imports	\$105,330,840	\$472,247,540
Total exports	\$98,290,823	\$297,196,365
Grain exports	\$14,427,478	\$49,536,308

(a), 1910 (b), 1886 (*) , 1885.

The rate of growth of Canada is also illustrated by a comparison of the building permits of the chief cities last year and the year before:—

	1910	1911
Montreal	15,713,000	14,580,000
Toronto	21,127,000	24,374,000
Winnipeg	15,106,000	17,550,000
Vancouver	13,150,000	17,652,000

The Bank Clearing House returns of twenty cities for 1911 were \$7,336,866,000, against \$6,153,701,000 for seventeen cities in 1910, a gain of 19 per cent.; the gain between 1909 and 1910 being 18 per cent.

REVENUE AND TRADE.

The revenues and expenditures of the Dominion Government show plainly the growth of the country as a whole. The ordinary revenue for the year ending March 31, 1912, is estimated at between \$130,000,000 and \$140,000,000, as compared with \$117,780,000 in 1911 and \$36,000,000 in 1896. The expenditure for 1911 amounted to \$87,774,198, leaving a surplus of over \$30,000,000.

The totals of Canada's imports and exports for the fiscal year of the Dominion, ending March, 1911, were again record figures. The imports were \$472,194,000, and the exports \$297,196,000, the balance against Canada being the large sum of \$174,998,000, not far from the balances of any two previous years put together. The total trade was \$769,390,000, against \$693,161,000 a year before. While, however, the imports increased \$80,391,000, the exports declined \$4,162,000. This was principally due to very free imports in anticipation of the large cereal crop; to the increase in railroad construction and public and private building; and to larger immigration, the value of such settlers' effects as are declared, appearing as imports. It was also partly due to somewhat larger imports of gold bullion and silver. For the first six months, ending September, 1911, of the next fiscal year, the figures were even more striking, the imports being \$266,187,000 and the exports \$141,865,000, the balance against Canada for the six months being \$124,322,000, as against \$94,404,000 for the corresponding period in 1910. The imports for the half-year in 1911 included, however, an increase of about \$7,500,000 in gold coin.



THE NOBLE FAMILY GROUP IN FRONT OF MR. EDWARD NOBLE'S HOUSE
ON 13TH AVENUE, VANCOUVER, B. C.

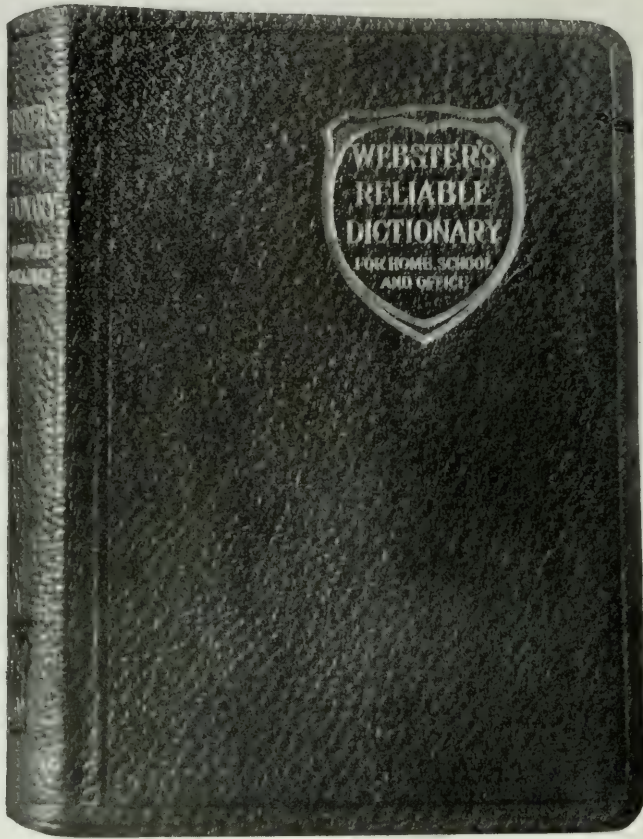
International Dry Farming Congress

The growing interest in the International Dry-Farmed Products Exposition at Lethbridge, Alta., next October, assures the largest exhibition of grains, grasses and root crops, farm machinery and implements ever held in Western Canada, and probably the largest of its kind ever held on the American Continent. Applications for entry forms have been received by Chairman McNicol of the Exposition Committee from nearly every quarter of the globe, and advices through diplomatic sources are to the effect that nearly all of the South American countries, Australia, Hungary, Turkey, Russia and the United States will send federal exhibits. It is stated that

the United States exhibit will eclipse anything that has ever been undertaken by the department of agriculture, while the Dominion of Canada will collect and stage an enormous sized exhibit of the products of the soil from the experimental farms and the fairs, and provinces of British Columbia, Manitoba, Saskatchewan and Alberta will have exceptionally large and interesting displays.

Throughout Alberta and Saskatchewan great interest is being manifested, and in many sections the farmers have arranged for and carried out this spring and summer a system of plots, by which each man raises something different than his neighbor on one

Webster's Reliable Dictionary



The above is a half-size cut of *Webster's Reliable Dictionary*, one of the Splendid Premiums now being offered *free* to Canadian subscribers to THE FRUIT MAGAZINE, SCIENTIFIC FARMER AND CANADIAN CITIZEN, handsomely bound in Full Morocco.

This dictionary presents in compact form an unusually large vocabulary of the English language, with definitions of extraordinary completeness. The book is designed to be a thoroughly reliable, and strictly up-to-date reference work that will be found equally useful in the school, the office, and the home.

Hundreds of illustrations aid in the elucidation of the vocabulary words, and many unexpected and unusual features of value will present themselves to the reader.

In orthography and pronunciation this work coincides with the rules laid down by Noah Webster, which for all practical purposes are now regarded as the best by educators generally over so large a portion of the world as to make their acceptance practically universal and their authority standard.

For full particulars about this *extraordinary Premium offer*, see Page 20 of the advertising section of this number.



THE NOBLE HOMESTEAD IN SASKATCHEWAN WHERE THE FAMILY
LIVED FOR 15 YEARS.

square rod, and pays particular attention to the product with a view to having the very best possible to be grown. In Saskatchewan the Department of Agriculture has been very active in encouraging the farmers to make an extraordinary provincial exhibit, as well as district exhibits, and the Saskatchewan commissioner, Prof. H. N. Thompson, has applied for 10,000 square feet of space, and served notice that his requirements will without doubt exceed this in view of the large number of farmers who are preparing individual exhibits.

Manitoba is not behind to any extent, for there are scores of grain growers in that province who are looking with wistful eyes at the premium list and making plans to capture the valuable farm machinery and implements offered. British Columbia is collecting the largest and finest exhibit it has ever planned to stage, and while it will not compete in many of the classes, being desirous of showing that courtesy to exhibiting states and nations, it will put before the eyes of the delegates a sight long to be remembered in its display of fruit, and the decorative work of its booths through the use of natural woods and minerals for which the country is famous.

The Exposition opens on Saturday morning, October 19th, and every exhibit will have been judged and all prize winners announced by that time. Exhibits must be in place ready for judging on the evening of

Thursday, Oct. 17th. In view of this setting ahead of the dates, so that the distinguished foreign visitors may see the wide-awake, hustling methods of the Canadians and may carry home with them the most interesting reports about the progressive spirit of the people and the wonderful resources of the country, it is desired that all exhibitors prepare to be on the spot as early as possible. To facilitate the exhibitors the Canadian Pacific Railway has arranged for a special rate for them under conditions that are exceedingly plain to understand. They can purchase tickets at any station in the Province of Manitoba, Saskatchewan, Alberta and British Columbia, good for the round trip, at the one way first class fare, on Oct. 10 to 15, upon presentation of a certificate from the secretary of the Dry-Farming Congress. This certificate will be issued by the secretary and forwarded upon request, but the applicant must in making the request send in his entry blank properly filled out in order that a number may be assigned him. The Official Premium List is ready for distribution, and, together with the official entry blank, will be sent to any farmer or intending exhibitor upon request to John T. Burns, Secretary, Lethbridge, Alberta.

Intending exhibitors in Eastern Canada should write to the Secretary for special information as to rates for and east of Manitoba, and the earlier these requests are re-



DIAMOND WEDDING PIC-NIC.

THE NOBLE FAMILY JOURNEY FROM VANCOUVER TO BOWEN ISLAND
TOGETHER, WITH THE OLD OXBOW BAND FURNISHING MUSIC.

ceived the better, in view of the making of arrangements for suitable train service and accommodations, as well as the careful handling of exhibits.

Districts contemplating exhibiting can obtain their allotment of space upon application to Chairman J. W. McNichol of the Exposition committee after August 10, and they will be privileged to begin the arranging of their exhibit any time after Oct. 1.

The reception accorded the Canadian commissioners of the International Dry-Farming Congress on their tour of the western states has been flattering in the extreme and it is believed that as a result of their visits there will be official representatives from upwards of 20 states, while a dozen or more will send exhibits. As indicating the trend of public opinion it is anticipated that the governors of many of the northwestern states who have been prominent in the agitation for immigration to that section will attend, and the acceptance of the formal invitation sent out by Hon. Duncan Marshall, Vice-President for Alberta of the International Dry-Farming Congress, has been received by Secretary John T. Burns from several governors.

Governor Oddie of Nevada, after a conference with Hon. Daniel Morgan, one of the commissioners, declared himself heartily in favor of urging that every western state be represented officially and that each send a large exhibit.

Governor William Spry of Utah acknowledged the invitation sent him by Hon. Duncan Marshall in behalf of the Canadian Board of Control, takes the opportunity of assuring the officials of the Congress of his hearty co-operation in the sending of a representative state delegation and exhibit. He plans to attend if his official duties will permit.

Governor James H. Hawley of Idaho will attend and will head the state delegation in its effort to boost Boise for the next Congress. Governor Lee Cruce, of Oklahoma, will head the Oklahoma delegation that will come by special train to endeavor to capture the 1913 Congress for Oklahoma City. Governor Edwin L. Morris of Montana will without doubt be in attendance, he being one of the vice-presidents of the Congress and one of its most ardent supporters. Governor M. E. Hay, Washington, will probably accompany the Spokane special train that will bring one of the largest district exhibits ever collected to show the products of the Inland Empire, and Governor Oswald West, of Oregon, who is greatly interested in agricultural development, may accompany the special train that will bring delegates from California and Western Oregon, which Tillman Reuter, the Portland member of the Board of Governors, is arranging, and which will bring a large exhibit from the 12 northern counties of California, gathered under the auspices of the Sacramento Development League.

The Little Apricot Cutter

AN AUSTRALIAN ROMANCE

By Mrs. M. Ella Chaffey

CHAPTER XX.

DAFFODIL ADOPTS A MISTRESS.

It is now necessary to retrace our steps and to go in search of our little heroine, whom we left at the door of John Smiley's office on the morning of mail day.

Since Mrs. Fourfields was far too ill to undertake the journey to Western Australia, Helma had persuaded her mother to let her go in her place. It may seem strange that her mother should have readily agreed to this arrangement; Helma herself when she proposed it, hardly expected that she would be allowed to go.

Nevertheless the plan pleased Mrs. Fourfields. Her husband had been much in her thoughts during the hours of pain and fever she had been through; her heart yearned in pity over him, and when she thought of him ill and lonely, perhaps even dying, in that wild place, she was glad to welcome any project that would be for his relief. Next to going herself, it would satisfy her to know that Helma was on the way to him, to give him the woman's care he needed.

"Though I should not like to have you go, Helma," she said, "did I not feel confident that I shall be able to follow you in ten days at the least."

"Yes, Mother, you must make haste and get quite well, for I shall not like being in that strange place without you."

Nothing was said about Valtin, although he was in the thoughts of both mother and daughter. But Mrs. Fourfields' feelings were greatly softened towards Valtin. She even forgave him the grief his silence had caused Helma, when she remembered that it was he who ministered to her husband's comfort during his illness. Moreover she was satisfied in the thought that Helma would be under her father's care and busy at his side until she came to join them both. Of what life at a mining camp actually was, the little lady had really no conception.

So Helma left her mother in the charge of an excellent nurse and set out on her travels alone. She carried a letter from Mrs. Fourfields to her husband—a few lines weakly written—but no message was posted, since

she would arrive as quickly as the mail, and it was decided that nothing would be gained by telegraphing. It might alarm the sick man, they thought, to learn so briefly, that Helma was coming to him because his wife was unable to move.

That she arrived safely at her destination, too late to see her step-father alive, we know already. The lawyer had broken the sad news to her as gently as possible. It was a great shock, but she felt it more for her mother than herself. The busy man offered to accompany her to the Camp, whither she was bent on going without delay, and seemed anxious to befriend her in every possible way. But Helma declined his services; later on, she said she would be glad of his advice and help, but just then she felt too bewildered to know what to do or think.

Her one longing was to see Valtin. He would help her as no one else could. Therefore, after listening carefully to the lawyer's directions about the road she must take, she set off at once across the flat, without even waiting to partake of breakfast at the "Travellers' Roost," as John Smiley was most anxious that she should do.

She felt as though she were in a dream, as she walked along that strange road. It was an exquisite morning. The thunderstorm of the night before had cleared the air and laid the dust; all Nature looked the cleaner and the fresher for it. Wild flowers bordered the roadside and sprinkled the flat; a few shrubs were in bloom and all the bushes sparkled with the moisture of the late rain.

In spite of sad thoughts of her dead step-father, to whose assistance she had come too late, Helma could not but feel, deep down in her heart, a tremulous joy. Would not Valtin be at the Camp? Soon, soon, all would be explained and understood between them.

THE BEND IN THE ROAD.

Helma looked with unconscious pleasure at the small grove of straight young trees, which exhaled a leafy perfume as the hot morning sun drew out the hidden rain in the form of vapour.

As she walked by her foot struck against something. Her eyes had been fixed on the

trees; now she looked down and beheld a small, white object lying half-buried in the earth.

It needed but a glance before she recognized it. It was the knife with the carved handle that had been her parting gift to Valtin. She picked it up, and as she did so a pang went through her heart as though the blade had pierced it. Alarm, doubt, fearful misgiving made her pulses beat painfully as she looked at it. Full of dirt and dust it was, as if it had been trodden under foot. Had it been dropped there in carelessness? she asked herself, or had Valtin's forebodings been realized? Had it been wrested from him in some fearful struggle which had cost him—perhaps—his life, and of which the ground on which she stood bore traces? The rain had not obliterated the signs of the conflict that had occurred in the night; the grass and small bushes were beaten down and broken, and in the ground were deep imprints which the rain had not washed away.

As she stood, lost in painful thought, she fancied she could hear some one speaking, among the trees. She listened, but was not able to catch any words, though the monotonous sound of a voice continued.

Quickly slipping the knife into her pocket, she stepped into the grove, following the direction of the sound. A few steps brought her in sight of that prostrate form. It was the cockatoo she had heard speaking.

"Give us a lump o' sugar, Boss," the poor bird repeated in unvarying, persistent tones, as he walked up and down, continually, beside his master's body, endeavouring by all the arts he knew, to attract his attention.

It was a ghastly spectacle for the girl's eyes to light on unexpectedly, in this strange and lonely place. Helma shrank away in horror. The mystery deepened and she felt now that this grove had some terrible tale to tell, and that her lover was in some way connected with it the presence of the knife on the spot assured her.

While she stood thus, dazed and half-faint, Daff surveyed her gravely with his head on one side. He found nothing antagonistic in this soft-eyed, sweet-faced maiden. So he stepped towards her, with his slow, ungainly gait, evidently bent on making friendly overtures.

"Cockie wants his tucker," he said.

But Helma looked on this living companion of the dead with something the same feeling of fear that had inspired the Baron.

As Daff tweaked the hem of her dress, she sprang back nervously.

"I must go and find some one," she said aloud, "and tell them——"

She hurried on, faster than ever, in the direction of the Camp, for now a terrible doubt was assailing her that she would not find Valtin there after all. What she thought, what she expected, she could not have told. Only, she feared.

Arrived at the little iron house on the road, she saw some one on the verandah, bending over the flower pots, and she at once made up her mind to tell this person of the horrible discovery she had made. Her limbs were shaking, her head was swimming, she felt ready to faint. It would restore her, she fancied, to speak to a fellow-being and to unburden herself of the dreadful knowledge she had come by.

Mademoiselle was saying farewell to her plants and giving them a last sprinkling of water.

"Little flowers," she murmured, "adieu! You are not like me; you can blossom in this wild place, while I wither and die here. But you stay and I go, and therefore I am full of joy——"

She looked up and saw Helma, who was standing before her, with a pale, frightened face. Her lips quivered when she tried to speak, and her brown eyes looked unnaturally large.

"Good day, Mees," said Amanda, briskly, for she was not inclined to sentiment except in regard to her own affairs; "do you want anything?"

This matter-of-fact tone roused the girl more effectually than any kinder enquiry would have done.

"In the grove," she gasped, pointing up the road, "there is a dead man——"

"What!" screamed Amanda. Her first unreasoning thought was of the Baron; but after all, she knew him to be safe, for had she not given him his breakfast hardly more than an hour ago? So she quickly overcame this first agitation and listened with calmness and curiosity to Helma's short account of what she had seen.

"A tame cockatoo?" she interrupted once. "Then I think I know the man."

Nothing would satisfy her but that Helma should conduct her to the very spot and show her this strange spectacle. So the young women went back over the road together, and Helma entered the grove once more.

It was their voices the Baron had heard, the sound of which had struck him with terror, and caused him to take to the bush, where he was lost.

"It is Andy Mann, the partner of Monsieur von Bergen," said Mademoiselle, after looking at the body attentively. "Here is a tragedy in verity, but happily it is not our affair," and she gazed at her companion composedly.

She was a better actor than the Baron, because her conscience was clear. But all the time, as she talked, she was wondering whether this dead body were the cause of her friend's agitation of the night before, and that strange desire of his to account for the absence of her two brothers, an absence of which she had heard nothing until he spoke. She did not suspect the Baron, oh no, but Raoul and Auguste! Why, then, should they go away so suddenly?

As for Helma, it did not surprize her to hear her lover's name mentioned in connection with this man, whom they both judged to have been murdered. She had to a certain extent recovered from the succession of shocks which she had received that morning. She felt calm now, but dull and unfeeling. An inward conviction possessed her that she would not see Valtin at the Camp, or anywhere, as she had fondly hoped. Whether he had shared the fate of this poor man who lay dead at their feet, she did not as yet dare to ask.

While they were looking, and Amanda was chatting on, unconcernedly, telling Helma that no doubt the sailor had had a quarrel with some drunken comrades, and this was the result, Daffodil renewed his offer of friendship and continued to assure Helma in plaintive tones, that,

"Cockie wants his tucker!"

"He was the dead man's one friend," said Mademoiselle Amanda. "When you did see one, you did see the other. I think it would be kind to kill him now."

"Poor fellow! He does not seem to want to die just yet," said Helma, as she reached down and stroked Daff's smooth white feathers and gently lifted with one finger his yellow crest. She shuddered when she first touched him, but that feeling gave way almost immediately to one of liking for the faithful bird, who, on his part, was well pleased to submit to her caresses: for birds and beasts all loved Helma.

It ended in his climbing to her shoulder,

and once there he resolutely refused to come down. He paid no heed to Helma's coaxing and offered to peck Amanda savagely when she tried to drive him from his perch.

"I will feed him when I get to the Camp," Helma said at last, giving up the struggle. She found some unexpected comfort in the fact of the bird's having attached himself to her.

Before this she had told Amanda who she was and what had brought her to Possum Tail Ridge. The Frenchwoman was kind, but not sympathetic; she was too much occupied with her own affairs just then to enter into the joys and sorrows of others. So at the gate of the little house they bade each other good morning, with little expectation on Amanda's part that they would ever meet again; and Helma hurried on over the short stretch of road that still separated her from the Camp, while Amanda went inside, to wait for her friend to return, with the Englishman and the notary.

Arrived at the Camp at last, Helma found the place deserted, save by the kind neighbour who still watched by the dead. Nothing had been seen of the Baron, the two brothers or of Valtin von Bergen, since the night before, and great surprise at their unaccountable absence was beginning to be felt by the few visitors at the Camp.

Father Brent had been there and had promised to make all necessary arrangements for the burial, which was to take place that afternoon. Soon after Helma arrived, a carpenter appeared to see about building the simple coffin that would be required. After that all was quiet for several hours.

Mrs. Mueller, the woman from the neighbouring camp, had been glad to return to her children and her household duties. After she left, Helma sat alone in the large outer room and passed in review all the events of that morning, pondering the mystery of the grove at the bend in the road, till her heart was sick with apprehension.

She longed to be up and doing; to make enquiries, to fathom the mystery, to find Valtin. But there was nothing for her to do but to sit still and wait. Her mother's husband, her poor step-father, must first of all be laid reverently to rest. After that it would be time enough to think of other things.

At noon the motherly neighbour brought over some hot tea in a "billy can," and a few sandwiches. It was the first time Helma had broken her fast that day.

"How good you are!" she exclaimed, as tears, due chiefly to physical weakness, welled up in her eyes.

"There's nothing like a cup of tea to keep a body up," replied the woman, cheerfully. "You're feeling low, and I don't wonder. If you'd like a little company, I'll send over a couple of the children to liven you up a bit."

Helma did not want to be "livened up," but as the offer was kindly meant, she accepted it, thinking it might be some help to the over-worked woman to be relieved of two of her family for even a short time.

But the children diverted her in spite of herself. Also the cockatoo, after having been supplied with the "tucker" he demanded, proved himself a most entertaining and companionable bird. Helma had not any time to think of her own troubles until the hour of the funeral brought Father Brent and about a score of men, miners chiefly, who tried to show by this act of respect, not so much, perhaps, regard for the dead, of whom they knew little, as sympathy for the living.

The Doctor, tipsily tearful, was one of those who followed the remains of "Harry Fairfax" to the grave. John Smiley was there, too; but of the four comrades of the dead man, not one appeared.

"I will come back and talk to you, my child," Father Brent had said before he left. "We will find some comfortable place for you to stay tonight and as long as you may be here. In the meantime, be comforted. Good Mrs. Mueller will stay with you until I return, I know."

"Yes, sir, that I will," answered the neighbourly woman, cheerfully. "You may depend on me, sir. I won't let her feel any lonelier than I can help." And she chatted on when he was gone, beguiling the hours of the long afternoon with accounts of each individual child of her large family, and occasional bits of gossip thrown in.

Of course she had something to say about the murder in the grove. Of one thing she was sure.

"That young man that nursed your father, my dear, your step-father, I should say—never had no hand in it. A kinder-hearted young man never breathed, bringing bags of lollies to the young ones every time as ever he went to the store. No, though I'd be sorry to breathe a word against anybody, it's a deal more likely to be one or other of those foreigners, who it appears have made off, too. The one they called the Baron was

in the township this morning, they say, so it's not likely to have been him."

Helma tried to listen to it all, but her head and her heart were both aching, and she was thankful when at last Father Brent's tall form came in sight and good Mrs. Mueller took herself off for a short time, with a hearty and sympathetic kiss.

CHAPTER XXI.

HELMA AND AMANDA.

There had been some difficulty, when the funeral was over, in finding a suitable place for Helma to stay. The first person thought of was Mrs. Mueller, who would gladly have taken her in; but as she, her husband and eight children were already crowded into two small tents, accommodation in this quarter was not to be expected. Then there was Mrs. Tooby, who also would have done her best for the strange young lady, but Father Brent was of the opinion that a public-house, even an eminently respectable one, like the Travellers' Roost, was not a suitable place for a young girl to stop at. Late in the evening it was proposed to move one of the tents from the Fleur de Lys to the Mueller's encampment, but as it was too late to do anything of the kind that night it was at last decided to accept an invitation from Melle Territet to spend the night under her roof.

This invitation had been extracted from her by Father Brent, who never failed to ask for what he wanted, on behalf of others. It had been given unwillingly, for was she not expecting to leave Possum Tail Ridge with the Baron, if not that very night, certainly the next day at latest? To be sure he had not yet returned with the Notary and the papers as he had said he would. This was vexatious, and in the light of so many other strange happenings, even alarming; but doubtless some unforeseen delay had once more occurred.

Still, as she must hold herself ready to leave at the shortest notice, a visitor in the house would be an embarrassment. She had consented in the end, however. Marie Simple was to be left behind and the old woman was broken-hearted at the thought of parting from her mistress; it might divert her, Amanda thought, to have some one in the house with her for a few days. So the invitation was finally given, though with reluctance.

Amanda had promised her "bonne" that she should occupy the little house, which was left sufficiently furnished, for as long a time as she cared to stay there, which poor Marie

assured her, tearfully, would not be for long. She was sorry, in her good-natured, transient fashion, for the old woman, but the Baron was not a liberal man in dealing with his inferiors, and he had refused to make any other provision for the woman.

In this manner Helma came to the trim little iron house with the pots of flowers on the verandah, and having come, she stayed longer than was expected.

Mademoiselle, who rarely made friends of her own sex, commenced by treating her with cool politeness only. But she soon began to like her quiet companion, for, in the first place Helma was a good listener, and she, as we know, an inveterate talker. Then, when a day or two had passed and she still saw and heard nothing of the Baron, her distress of mind was so great that it became necessary to her to confide her trouble to some one, and Helma's ready sympathy was comforting.

"But it is so 'extraordinaire,' she exclaimed one evening, three days after Helma's arrival, as they sat together in the dismantled "salon." "My brothers, yes, they go to the Port, the Baron, he tell me so. Mr. von Bergen, that is a mystery that no one can understand; some people say he do kill Andy Mann and then do run away, but I do not believe it, no, not I! But 'mon ami,' where have he gone? He have never tell me good bye; he come here, he say, 'I come back in one hour,' and he come back no more! I will tell you, Mademoiselle. Till yet I tell no one, only Marie. My friend and I we would go away. The day you did come, that very night we would go away, or else by the coach in the morning. He would sell the mine to the Englishman and get much money, and then we go away to France—to Paris—to Paradise!"

She paused and the tears began to pour slowly down her cheeks.

"Some times I do think he have gone away and left me here alone, because he do no more love me! Do you think it can be so, Mademoiselle?"

"No," said Helma, with sympathetic decision. "It can't be that. I think there is some mystery in which they are all concerned and which, if we knew it, would account for the disappearance of both the Baron and Valtin, and—and—for that dead body in the grove——"

"Perhaps, but I do not think! For a long time I believe 'mon ami' do not love me

the same as always. And he can be cruel, Anatole, oh, he can be cruel!"

"He would never leave you without a word."

"You think so, but I do not think. You are cold. You do not understand; but true love is always jealous."

"I am sure he would not be so unkind," Helma repeated earnestly.

"And your Valtin, have he not left you in the same manner?" demanded the quick-witted Frenchwoman, who had already guessed Helma's secret, although she had tried to guard it carefully.

"He did not know that I was coming," the girl faltered, feeling bound to defend her lover from such an aspersion.

But Amanda only shook her head obstinately. It pleased her to believe that both she and Helma were deserted by their faithless lovers.

Two characters more utterly dissimilar than these could not be imagined, and yet circumstances had brought them into something like intimacy, and their common anxiety and sorrow engendered a certain affection between them in the end.

During these days Helma suffered great mental anguish. She knew even without Amanda's plain speaking, that people would connect Valtin's disappearance with the murder of Andy Mann, more particularly should they know of the finding of the knife, which, however, she never breathed a word. Needless to say, in her own heart she held him guiltless, believing him incapable of striking down a fellow-being unless in self-defence or in the protection of some one weaker than himself. She decided, when her thoughts allowed her to come to any conclusion at all, that Valtin was the victim of some horrible conspiracy, and day by day the conviction grew in her that she would never see him alive again.

Numerous theories to explain the mystery had been broached in the settlement. They all took a great deal for granted and left a great deal to be explained. In some of them Valtin figured as a villain, in some as a victim. John Smiley stood up stoutly for von Bergen's innocence. He had his own theory to account for the young man's disappearance and it was not in any wise connected with the sailor man's death. In fact he had made a pretty shrewd guess at the truth.

At first Amanda and Helma had stayed quietly in the house and their knowledge of passing events had come to them through Marie or Mrs. Mueller, who still took a friendly

interest in Helma, although the idea of moving the tent had been given up after the first day, when Mademoiselle began to melt towards her guest, and assured her when she spoke of leaving, that she would be "desolee" to lose her society. "Mademoiselle is so amiable," she said; "it giv me great pleasure to talk to Mademoiselle." Which was the truth.

However, the day after the conversation recorded above, Helma persuaded Amanda to have an interview with the lawyer, and together they went to his office. John Smiley was able to make clear the reason why the sale of the Mine had not been concluded on the morning that Amanda had last seen the Baron. He also told her of the latter's parting words, in which he spoke of the possibility of his being absent for a few weeks, and that in such case he would send papers of authority to her, Mademoiselle, to enable her to settle with the English agent, Mr. Brown.

For a short time after this visit, Amanda's mind was much relieved and she looked for a letter to explain the mystery, and though still uneasy she was inclined to look at the affair philosophically. But when it was soon discovered that the Baron had not been a passenger by the coach at any stage of its journey, and that, moreover, he had been seen to start across the flat after leaving the lawyer's office, although he had never reached the Camp, her misgivings increased tenfold, and she had a search party organized to scour the scrub in all directions.

In the meantime Helma had written to her mother, telling her all there was to tell, and urging her to stay where she was, as she could do no good by coming now. She also explained business matters as well as she understood them, and asked Mr. John Smiley to communicate with her mother as well. She told her of Valtin's strange disappearance, and said finally that she would stay where she was until her mother wrote to advise her what to do or to bid her return, for she hoped and they all hoped daily and hourly, to hear some news of the missing Baron and Valtin. It was thought possible that when Mademoiselle's two brothers returned from the Port, if indeed they should return, that they might be able to throw some light on the business.

The inquest held on the body of Andy Mann resulted in a verdict to the effect that the deceased had met his death through a blow on the temple, inflicted by some party or parties unknown.

The English agent still stayed on at the Ridge, but the sale of the Fleur de Lys claim seemed to be surrounded by so many difficulties, real and technical, that even John Smiley, always disposed to an optimistic view of things in general, could not hold out any hope of a speedy settlement.

Thus matters stood for two weeks. Day by day Helma lost heart, and Amanda grew pale with waiting and watching.

Then came the finding of the Baron's body, and for Amanda at least, suspense was at an end.

"Il est mort! He is dead! Mon ami, mon Anatole, 'mon adore!'"

A messenger had just arrived with the news and the letter, and she burst into the little dining-room, where Helma was sitting, sewing.

"He did think of me, and love me at the last, me who was so infamous as to doubt him," and she fell to weeping wildly, while she hugged to her bosom the crumpled sheet of paper that contained the Baron's last message.

Helma had risen, white and trembling. She felt for her friend, but her own suspense was too terrible to be borne a moment longer.

"And the other?" she demanded, breathlessly.

"The other? What other? There is no other!" Mademoiselle replied, as she rocked herself to and fro, and clenched her hands and smote her breast in an utter abandonment of grief.

Hardly realizing what she had expected, Helma sank into her chair again with both hands pressed to her heart in a strange revulsion of joy. She need not give up hope. At least his body had not yet been found.

After a time, when Amanda's sobs and tears and self-reproaches had spent themselves, she was able to explain to her companion all she had learned from the messenger of the Baron's melancholy fate, and she spread the paper on her knee and began to read it aloud, translating it as she read into broken, pathetic English.

The Baron's message read as follows:—
To Melle Amanda Territet:

My darling,—

I have wandered in the bush for two days and have lain for one night, looking at the stars. I lost my way by accident and have now given up hope of ever seeing you or any human being again. So I write a word of farewell to you, my little one, whom I swear

I have always loved tenderly, although sometimes you doubted me. You will go to Paris without me, now.

Listen to my dying words, if ever they should reach you. A third share of the Fleur de Lys claim belongs rightfully to the heirs of my partner, Harry Fairfax, or Arthur Fourfields, subject only to a claim of three hundred pounds, which he owed me. The document which he signed before his death, giving up his entire interest, he signed under a misapprehension, believing it to be an acknowledgment of the above account only. I deceived him. I desire now to confess my sin and to make reparation, and I solemnly swear that the above statement is true.

Von Bergen holds a transfer in trust. He will come back.

It grows dark. Adieu forever.

ANATOLE FORTIER.

The rest of the day Amanda spent in tears and lamentations, but the following morning, when she appeared at the breakfast table, clad in black, Helma looked at her in astonishment, for she seemed like a changed woman. Her face wore a grave, mature look, never seen on it before. The effect was in part due to her sombre apparel, but there was also an air of conscious dignity about her that was new, and became her well.

"Will you come with me to the Notary's today, my dear?" she asked when she was seated. "I must tell him the last wishes of my friend. And I shall also have a surprise for him and for you." Her eyes flashed exultantly and she seemed on the verge of making known her surprise then and there, but she checked herself and changed the subject, with an effort.

"How do you find the black becomes me, petite? It is the old fashion already, for I do wear this dress for my poor Papa when he die."

Nothing on this side of the grave could make Amanda unmindful of her appearance.

"I will carry the black one year for my friend," she continued. "After that, who knows?"

"Everything becomes you, Amanda," Helma replied with ready admiration for the beautiful Frenchwoman.

Those few lines written by the Baron had meant almost as much to Helma as to Amanda, though in an entirely different way. The confident assertion, "He will come

back," changed the whole aspect of the world to her, when she heard it.

Before that, despair had filled her heart. Day by day and night by night hope grew fainter. She told herself that Valtin was dead, that she would never, never see him again, and she had grown morbid from much brooding and sad communing with her thoughts—cheerful, sensible Helma, who had laughed at Valtin's superstitious fears. The motto on the knife handle had come to mean to her a spiritual calm after the tempest of passionate love and hopeless loss. She believed that she ought to seek after that peace and pray for it, but as yet she had not found it possible to even desire it.

She hated the sight of the knife, now, for she had almost made herself believe that the giving of it had brought all this misfortune to her lover, if it had not actually caused his death.

But since yesterday she had lived again. All these foolish fancies were swept away. She believed that Valtin was alive and would come back to her. There was an outward change in her, too, though more subtle than Amanda's visible transformation. A healthful, happy spirit glowed in her face and beamed in the soft, brown eyes, which leaned to hazel, as Amanda's did to black, so that her companion looked at her curiously when they stood ready to start on their walk, and said to herself, "The child is pretty. I had not thought it."

Mr. John Smiley was secretly delighted when he read the Baron's letter, though consideration for Amanda made him reserved in expressing his pleasure. First of all, his own private suspicions were shown to be amply justified, which was enough to give him some satisfaction; and secondly, as he had felt a friendly interest in Helma from the first, he was glad that she and her mother would now receive their rightful share in the mine.

In view of subsequent events he had taken upon himself to disregard the Baron's instructions, and had not registered the document which had been put in his hands for the purpose. Now he took it out of the safe, where it was still lying, and said that with Mademoiselle's permission, he would destroy it on the spot. Amanda having signified her willingness, the deed was done forthwith, and so the Baron's act of reparation towards his dead partner was consummated.

"So far so good!" said the lawyer, cheerfully, as the fragments fluttered into the

wastepaper basket. "The next thing will be to find Mr. Portier's heirs. Perhaps you can help us in that, Miss Territet?"

"I can help you easily," she replied, drawing herself up dramatically. "Anatole Fortier had no heirs but me, for I was his wife."

This was a surprise, indeed, and the unexpected announcement was received with momentary silence. Then the lady proceeded to verify her statement by producing a marriage certificate, which appeared to be perfectly correct in every particular. It had been issued at the Mairie of one of the Parisian suburbs, and certified that Amanda Territet and Anatole Fortier had been married before the Mairie on the 15th November, 18—, just three years before.

Although the title of Baron did not appear upon it, Helma thought she understood now the new gravity and dignity her companion had assumed with her widow's gown of black. She took Amanda's hand and pressed it gently in her own.

"Monsieur le Baron have wish our marriage to be a secret," the Frenchwoman explained, clinging fondly to the title, which had existed only in her imagination, but which she believed their fortune would have made a reality. "He have reasons, but I know them not."

"This simplifies matters very much, Mrs. Fortier," the lawyer said briskly, when he had finished looking at the paper. "I will tell my client, Mr. Brown, that he may be able to conclude the business that has kept him here so long, much more speedily than seemed likely a week ago."

"The sooner the better for me, too, Monsieur. I desire to leave this place and to return to my own country, where I am perhaps a little happy once again," Madame said, eagerly.

"I must communicate with Mrs. Fourfields first and learn her wishes. She must take steps to inherit the property. Some delay is unavoidable, unless, as your husband says in his letter, Mr. von Berger should return with the transfer—"

The interview was brought to an end at this point by the entrance of other clients, who claimed the busy man's attention. So the ladies took their leave.

The news that Mademoiselle Amanda had been the Baron's lawful wife was not long in spreading, and furnished material for gossip for many a day. But little was known as to the contents of the lost man's communication to his wife, for John Smiley was

a man to keep his own and his client's counsel, and even Mr. Brown was only told that the Baron's widow had withdrawn all claim to the third share in the mine, which would now go to Arthur Fourfields' heirs.

About this time Raoul and Auguste Territet returned, bringing with them a few pieces of machinery for the mine, and other merchandise, to justify their absence. Of course they professed complete ignorance of all that had transpired during the night of their departure from the camp, and afterwards, and their stolid countenances betrayed no emotion of any kind when they were informed of the death of Andy Mann. But the terrible end that had overtaken the Baron affected them more deeply, they grieved for him, for both had felt a dog-like affection for their masterful brother-in-law.

CHAPTER XXII.

AGAINST HIS WILL.

But what of Valtin all this while?

We must take another step backwards to find our unfortunate hero prostrate in the bottom of a spring-cart, with his hands and feet bound, and a gag in his mouth that came near to choking him. When the Territet brothers drove off, leaving the Baron and Andy Mann engaged in a lively tussle, they must have skirted the township, so Valtin judged, for he caught an occasional glimpse of lights through the scrub. After passing it by they struck the coach road, along which they moved at a slower pace, driving all night, and until the sun was fairly high in the sky next day.

At an early hour in the morning they had met the coach; Valtin caught a glimpse of four horses and a flash of red and yellow as it swung by, and Helma, looking out, saw a man lying half buried in the straw in the bottom of a cart as though he was asleep. It was impossible that she should guess that she had passed Valtin on the road, as impossible as it was for him to imagine that the little sweetheart who was even then in his thoughts, was seated in the lumbering vehicle which he had tried in vain to signal as it rolled along. For one moment his hands were lifted before they were struck down by the watchful Auguste. No one observed the movement from the coach.

"Lie still, imbecile, or we will make you more secure," the ferret-faced youth said viciously.

That was early, when the light was still indistinct.

Valtin judged that it must have been about ten when they halted and built a fire a little distance from the road.

The horse was unharnessed and given a feed of oats. There was a watering place a little way off and Raoul¹ led the animal to it, returning with a billy-can full of water, while the lynx-eyed Auguste kept guard over their prisoner.

Coffee was brewed, and then at last was the gag removed from Valtin's mouth, and the cords that bound his wrists loosened. Auguste gave him to understand, when this was done, that if he gave them his word of honour he would make no effort to attract the attention of the people they chanced to meet, they would leave him in this state of qualified freedom.

"Where are you taking me?" Valtin forced his swollen tongue and aching jaws to ask.

"A little journey, for the good of your health only, I assure you. No one has any desire to injure Monsieur in any way," Auguste bowed with mock politeness, and Raoul laughed his loud horse-laugh.

Their jeers were intolerable, and in spite of his bonds, Valtin made a frantic effort to spring to his feet and get at them. But he only fell back helplessly in the cart, at which they laughed more than ever.

He had to admit to himself that he was for the time being at their mercy, and there was nothing for it but to agree to their terms, which he did at last, and received at their hands a pannikin of hot coffee and a couple of bush biscuits, which refreshed him mightily.

Towards evening they set out on their journey again, one of the brothers lying in the straw beside Valtin while the other drove, and this they took it in turn to do. The horse was both strong and tough or he could not have gone on steadily for three whole nights and part of three days, as he did, before they came to their destination.

No adventure befell them on their way through the desert. But few people met them on the road and those who showed any disposition to enter into conversation, met with no encouragement from the Brothers Terret. Our hero watched and hoped for an opportunity to escape, but none presented itself. They always camped at a little distance from the watering places, where they might be expected to fall in with other travellers,

and when in camp, never for a moment did he escape the surveillance of one or both his guardians. Also, both brothers were armed; Valtin was not; and they were careful to let him know that at the first attempt to escape on his part, they would shoot him down without hesitation, a fact which Valtin did not doubt.

When they reached the green and hilly region near the coast our hero felt that now at least he would soon know, if he remained in his present position, what disposition his captors were meaning to make of him. He kept continually on the alert all that day and braced himself for a determined effort to escape believing that if he could only get away he would, as they were so near the coast, have no difficulty in finding food and shelter, even if he could not reach the port itself that night. They had kept to the coach road from the first; Valtin had no difficulty in recognizing the country he had passed through on his way to Possum Tail Ridge.

Towards evening on the third day they made preparations for another start as usual. The fire was built up again to boil the billy for the customary brew of coffee, and when all was ready Valtin ate and drank heartily, with the idea of fortifying himself against what might possibly prove a long fast, for that night, or never, he meant to effect an escape.

His feet were still bound, but he thought that under cover of the straw he could loosen the knots so quietly that even the watchful Auguste should not suspect what he was about. Had he possessed a knife he would have cut them through at a stroke and made a dash for liberty; but the brothers had turned out his pockets at the first halting place and had confiscated the miner's pocket knife he usually carried. It was then he discovered that Helma's apricot knife was gone; its loss grieved him more than any of his other misfortunes.

Once more the cart set out, on the last stage of its journey this time, as Valtin surmised. He sat in the straw at the bottom with Auguste, ever watchful, beside him. He had but to wait till those lynx eyes grew drowsy, as he knew they would in an hour or two. Then much might be done in a short time.

But as he waited an unaccountable drowsiness stealing over his own senses, perplexed and vexed him sorely. Why should he be sleepy at this hour? Least of all to-night,

when it was absolutely necessary to be wide-awake, to execute his purpose.

Useless to argue about it. The fact was he was uncontrollably sleepy, although the sun had barely set. Was it possible that the Brothers Territet had put something in his coffee? A sense of confusion possessed his mind; this was the last coherent thought that passed through it. He knew that he was dropping asleep; yet he had no power to resist an influence stronger than Nature. At last mind and body sank into a heavy stupor and he lost consciousness.

"He sleeps like a log," said Auguste, climbing into the seat beside his brother. "Touch up the old horse, Raoul, for, as for me, I shall be glad to see the end of this job."

When Valtin came to himself, he seemed to hear, first, a sound of rushing water, accompanied by a dull, monotonous thud, that suggested machinery.

He lay with his eyes closed and thought it was only a continuation of that drowsiness, with strange, far-away noises in his ears, which had pervaded his senses as he fell asleep. Yet he could not account for a smell of mingled tar and salt water in his nostrils. At last he opened his eyes and shook off the last fumes of the drug, which, as may have been surmised, was put in his evening coffee. He was dumbfounded at the extraordinary change in his surroundings.

He found himself in the lowest berth of a neat little stateroom, painted in white and gold and furnished with the usual requisites for an ocean voyage.

Through the open port he could see the sun shining on little waves of blue, and he heard the voices of sailors calling to each other in nautical sing-song on the deck above.

Slowly he raised himself and sat on the edge of his berth, looking at his feet, where the cords had been cut. There were none there now, but his ankles were sore and aching, so at least he had reason to believe that that part of his experience was not a dream. Then he stood up, and looked in the tiny glass screwed to one side of the wall. Like the old woman in the nursery fable he needed reassurance as to his identity.

However, it was his own visage he beheld, looking much the same as usual, save for the grime and dust of a three days' journey clinging to it.

"A little soap and water, and Richard will be himself again," he said, as he me-

chanically poured some water into the small basin and fell to washing himself.

After all, the sense of liberty was in itself agreeable. Valtin tried the door of his stateroom, and finding it unlocked, was by no means dissatisfied with the change in his surroundings. It was too soon yet for the ship itself to seem a prison to him and he only experienced a pleased consciousness that the Territet brothers were no longer one at each elbow, as they had been for so many uncomfortable hours.

The situation, though as yet inexplicable to Valtin, was simply this:

The two brothers, having brought their prisoner, still in a heavy stupor, to the port, carried him immediately on board a small French vessel which was to put out to sea at sun rise, it being then between one and two in the morning. The presence of the ship in port at the time was not a mere lucky chance, as may well be believed. The Baron had known that it was there and knew also when it was expected to sail, for the captain was an old acquaintance, with whom he had many dealings, both in his own country and abroad, and about whose movements he had lately had intelligence.

"La Belle Nivernaise" was a small steamer trading between the southern ports of France and various other points of the globe where precious stones and gems are to be procured. She had lately visited the pearl fisheries off the Western coast of Australia, and had for some reason connected with her own internal economy, spent a few weeks in the port whence Valtin had started on his journey "up country," a few months before.

While there Captain Lemaitre, the vessel's master and owner, had communicated with his friend Fortier, informing that he was about to set sail for South Africa and offering him an interest in a scheme he had just embarked upon. The Baron refused the offer, but when it became imperative in his opinion to rid himself of Valtin for a month or so at least the idea struck him that "La Belle Nivernaise" would suit his purpose admirably. So, while Old Harry lay dying, with Valtin watching beside him, his plan was unfolded to his hopeful brothers-in-law, of whom he never scrupled to make catspaws when it suited him, and for the trifling rewards promised, of a gold watch and a gun, Raoul and Auguste agreed to carry out his scheme. And it must be admitted that they succeeded in their part of

it very well. It was a risky business, but not a hitch had occurred, and after spending a few days of recreation at the port, they returned safely to the Ridge, as we have already seen.

In the midst of his ablutions Valtin heard a knock at the door, which was opened immediately after to admit a head surmounted by a gold-laced cap.

"Good day!" said the owner of the cap.

"Good day!" replied Valtin, surveying the newcomer critically and arriving at the conclusion that he was the captain.

The man was tall and heavily built, as Valtin saw before he had introduced himself wholly into his cabin; his features were dark and strongly marked, of a southern type. Captain Lemaitre was, indeed, a native of the Riviera, though his many voyages to all parts of the world had made him something of a cosmopolitan. His knowledge of English was almost equal to the Baron's, but during the interview that followed, and in fact in all his dealings with Valtin, he pretended to possess a most meagre understanding of the language.

"If you are captain of this vessel," our hero commenced straightway, a burning sense of his wrongs beginning to stir in him, "will you be good enough to tell me how I come to be aboard her—without my knowledge or my consent?"

His visitor shrugged his shoulders and smiled blandly. He had all that easy grace that impresses us English so profoundly when we come in contact with any man, woman, or child of the Latin races, but he did not inspire confidence.

"Pardon me. I speak vare leetle English," said Captain Lemaitre.

Valtin repeated his inquiry slowly and with angry emphasis, but the captain appeared to be still unable to grasp his meaning.

"Zese young men," he said lightly, "zay do zese sings. Too much vine; too much champagne, and zen zay sleep and zay forget."

This was adding insult to injury.

"You have the impertinence to insinuate that I was drunk when I came on board?" cried Valtin hotly. "You are in league with the Baron and those rascally Territets! You're in their pay, sir, I see it all now!"

It was useless to heap accusations on the impassive captain. He looked first puzzled, then distressed, and lastly impatient, as Valtin, stifling his wrath after the first outburst,

explained the situation in detail from first to last.

'Ze shentlemans say Monsieur desire go to Soud Afrique. 'La Belle Nivernaise' do not every time take passengers, only some time, one, two. Zay say Monsieur pay so soon he wage. Monsieur will zarefore have ze 'obligeance' to gif me tirty pound for one passage first class." This he said at last with the air of a man who has put up with foolishness long enough and now means to come to business.

"If you imagine," retorted Valtin, "that after being kidnapped and drugged and brought on your ship against my will, I am going to pay you for my passage. you are much mistaken, captain."

He had some hope that the skipper would offer to put him ashore when he found he was not to get any passage money, but he was soon disabused of this idea. The man knitted his brows in either real or pretended anger.

"What you mean?" he demanded, brusquely. "You no pay?"

"No, I won't pay."

Captain Le Maitre glowered at him in silence for a moment or two, until he mentally concluded that the young man was not to be brow-beaten and might as well be left alone. The Baron had promised to settle with him later.

"As you vill," he said at last, shrugging his shoulders indifferently. "You no pay, zen you vork. Come!"

Valtin hesitated, debating in his mind whether to offer money to the captain to put him ashore; but as he only had a small sum on his person, and it was not likely his promise to pay at a more future date would be considered worth much, he refrained from making a further appeal, and followed the captain as he led the way out of the comfortable little cabin, to darker and dirtier quarters in the forecabin.

(To Be Concluded in September.)

NOT WHAT SHE THOUGHT IT WAS.

The woman came cautiously up to the librarian in the big library and asked in low tones if she could get a book about David's Harem.

"Oh, yes," said the librarian, "we have a number of copies of 'David Harem.'"

"Hush," whispered the inquirer, "not so loud."

Lady Adanac's Fireside Talks

There is a subject on which I feel strongly and I want to lay it before my friends around the Fireside. It is the subject of Physical Pharisaism.

We all know that one of the greatest discoveries of our age is that of the germ origin of most diseases. I am not at all scientific myself and I hope I may be pardoned if in the following remarks I express myself in a wholly popular and unscientific manner. Germs, microbes, bacteria, bacilli—it seems to me all these are confused together in the minds of most of us, into a living mass of something unseen but full of horrible possibilities, and infinitely to be dreaded. We are as ignorant and as superstitious about this invisible Evil and as much afraid of it as our grandmothers were of witches and witchcraft. Our magazines are full of articles telling us how to circumvent the malevolent bacilli with which we seem to be hopelessly infested, with pictures of what they would look like could we but see them. They are as bad as the Plagues of Egypt all rolled into one—they turn our rivers into blood for us—they obscure our sky—they pollute our homes and are found even in our Kings' chambers.

The average person is horribly afraid of all this and seems to imagine that germ life is something new under the sun—instead of the same old condition of things that has prevailed ever since the first child of man came down with the measles—or the pre-historic disease that corresponds to it. Modern scientists did not invent bacteriology any more than Newton invented gravitation—they found out things about Nature's ways of working that they did not know before and are trying to turn the knowledge to good account—that is all.

William Black's novels are not read much nowadays. His leisurely style and cheerful philosophy of life are not at all twentieth century; "The Strange Adventures of a Phaeton" would be much too slow reading for people who ride in motor cars up to the speed limit, if not beyond it. But though we have changed our pace in the last fifty years, we haven't changed our nature and when I meet people so mortally afraid of germs that they would not share a cup with their dearest friend—I am reminded of one

of Black's characters—a Scotch boy whose name I forget, but we will call him Wullie. Wullie had a truly awful fear of the "deil;" there was no kind Providence for him in life, but only a malicious spirit whom he saw lurking in every object of Nature, waiting to do him a bad turn. Everything, from wind and water to the strutting "bullyjock," was in a conspiracy against Wullie; there was no doubt in his mind about the devil being more powerful than God, and all his time was taken up in trying to give his tricky enemy the slip.

Don't you think we are very like Wullie when our fear of disease and infectious germs makes us see only evil in nature, and brings out the evil in our hearts, so that instead of reaching out a helping hand to a sick friend or neighbor, we shun him, for fear his hand might be unclean or diseased? Or we refuse to throw a sheltering arm around a fellow being, lest in his clothing there might lurk some deadly contagion. There are people who go so far in this morbid dread of disease germs that they kiss an innocent child with misgiving—on their own account—and avoid the sick bed of their nearest and dearest.

The Moral Pharisee with his "Stand by, for I am holier than thou!" has always been an object of scorn, but is he any worse than the Physical Pharisee with his "Stand by, for I am *healthier* than thou!"?

I have seen heartless cruelty practiced in the name of modern science, and miserable cowardice hiding behind a pretence of sanitary precaution. People are so filled with dread of the White Plague, for instance, that they will go to any length to avoid a person they believe to be infected. I knew a man, exemplary father and son, active church member, who refused to allow a youth suffering from tuberculosis to so much as cross his threshold, for that and no other reason. The boy had a claim on his kindness and hospitality and was cruelly hurt by the rebuff. To my mind such an act towards a sick man seeking health is like a shove back to some one trying to climb out of a pit; it makes the road to the grave shorter and sadder. This is only one case—I know of many—and probably every one of my readers could supply at least one instance of the same kind

from their own experiences. Is it any wonder that true conditions are concealed and proper treatment is delayed, when board and lodging are everywhere refused to the sick, the half-sick, the merely delicate—all because of the morbid horror of disease that has taken hold of us along with our study of germs?

We don't shrink from sin very much nowadays; on the contrary, we are most tolerant; we speak of it very politely for fear of hurting its feelings and the old-fashioned names it used to be known by are seldom mentioned. But how we do dread disease! and what meanness and cowardice and uncharitableness we are capable of in our anxiety to avoid it! We send our sick to the hospitals and our dead to the undertaking parlors, where once they were cared for in the homes, and though this is partly accounted for by the changed conditions of modern life, it is often nothing less than a cowardly shrinking from a painful duty. Like the Levire in the parable we pass by on the other side when anything unpleasant lies in our path—especially if there seems to be a danger of germ infection in closer contact.

Human nature is capable of great deeds even in our day. But is it not strange and inconsistent that men should bravely face death on the high seas, and shrink miserably from it when it threatens them in the form of a microscopic germ? There are worse things than death, as those who went down with the Titanic knew—such things as trampling on the weak and seeking a selfish safety while we forget brotherly kindness and obligation.

Of course the evil germs must be fought by every sane and sensible means, but they do not need to be propitiated, like Wullie's "de'il" by a burnt offering of everything that is noble and kind and just in our natures.

The old rule is still the best: "Overcome evil with good." Healthy blood is the best antitoxin; plenty of sunshine and fresh air is better than fumigation; soap and water will keep us clean outside; plain food and exercise will keep us clean inside. Cleanliness is next to godliness, and health is no more than godliness of the body.

But, dear friends around the Fireside, let me implore you when you meet this modern terror, the disease germ, infesting some person to whom you owe a duty or to whom you can do a kindness, take your courage in your hands and laugh at it! The germ cannot hurt you as much as you can hurt it if you fight against it. Help the afflicted ones; do

all the good you can to them, and never, never let them see you shrink from them.

In the old days, when the Black Death wiped out populations in a few weeks, or not so long ago, when the yellow fever used to bring periodic sickness and death in certain parts of this continent, it was a well known fact that Fear was Death's most powerful ally. The nurses and doctors who scorned to run away from danger and who were so busy caring for the sick that they had no time or interest to spare themselves, generally came through the ordeal with their lives; while the chicken-hearted ones who took every precaution and neglected every duty that spelled danger, fell first and easy victims to the disease they feared.

Let me tell you a true story. It happened in Australia, in the arid interior where life is so parched and poverty-stricken that it would be small wonder if all the springs of human kindness were dried up, too.

A "blocker" (dry farmer) had gone with his team to the nearest township to buy necessities, leaving his wife with four children, the eldest only six. At dusk she went to the wood pile to get some mallee roots for the evening fire. As she stooped to pick up a root, a snake sprang at her and stuck its fangs into her shoulder. She tried to kill it, but it got away; it was the deadly tiger snake.

Horror filled the poor woman's soul, for the bite meant death. She had no way of cauterizing the wound. The only remedy she knew of was whisky and there was none of that in the house. The nearest neighbors were miles away; so she made up her mind to die.

Then came the thought, what of the children? The father would not be back for a week and there was not food in the house to last them for more than a day. Calculating that she had an hour or two to live she determined to fight off the deadly stupor that was already creeping over her and to devote all the time she had left to baking bread for her little ones.

The wood was carried up, the fire lighted, the bread mixed, all in feverish haste. First one batch was baked, then another, and another. The only oven the poor place afforded was a camp oven, which held but one loaf at a time.

All that night the mother worked, fighting the deadly poison in her veins, refusing to give up, struggling on until there was provision of bread to keep her children alive for a week.

When dawn came everything was done, the preparations were made, the house was in order, and she was ready to die.

But a miracle had happened, or so it seemed to her—the poison had worked itself out, its effects had passed in her night of effort, and she found herself weak, but well. In her desperate labors to preserve her children's lives she had saved her own.

This is a story of what actually happened, but may we not take it as a parable and apply it to ourselves?

THUNDER CAMP.

A Story for Children.

CHAPTER IV.

"Babbie, I want you and Dan to go upstairs and go to bed," said Betty, sharply.

Babbie stood at the foot of the stairs, flushed and angry.

"Well, I'm not going—so there! It's not nearly dark yet if it is half past eight, and anyway I mean to stay up as long as I please. You and Tom can have your old secrets, but I'm not going to be ordered about by you—" and so Babbie stormed on, for she had an unruly temper, which Betty knew of old and seldom roused.

As for Dan, he sat on the bottom step and watched the progress of events with interest, but with unruffled serenity. He had his fits of temper, too, but this was not one of his times.

"It's just this once, I tell you, Babbie. You simply *must* go. You'll know all about it afterwards."

But no persuasion would move the indignant Babbie, and at last force had to be resorted to, which was undignified for all parties and came very close to being unsuccessful, for Babs was an unusually muscular young person.

Tom took her by one arm and Betty by the other, and between them they ran her upstairs and locked her in her room, where they heard her drop on the floor in a storm of furious sobs.

Danny, the rogue, assumed a perfectly angelic frame of mind and allowed himself to be put to bed without a murmur. He said his prayers without the usual protest that he was too tired, and even added a few words of his own on Babbie's account, telling the Lord that she was very naughty, but he hoped she would be a good girl to-morrow.

Still panting from the exertion and excitement of her tussle with her sister, Betty joined Tom downstairs.

"We must never treat Babbie that way again, Tom, never," she said. "Father told me I had to be like Mother, and I'm sure Mother would never have pushed Babs upstairs by main force."

"Of course not; she wouldn't have needed to," said Tom. "We had to get her out of the way somehow, and it was her own fault if she wouldn't go properly. You know Babs' name ought to be *Blabs*, for she can't keep her mouth shut to save her life."

"No, that's true," sighed his sister, adding eagerly: "Now let's see what Ling has got."

They found Ling in the kitchen surrounded by what seemed to be merchandise enough to stock a small shop. Although as Babbie had said, it was still daylight, or at least dusk, he had the doors shut, the blinds down and the lights turned on. The table was piled with parcels of every description, while on the floor stood sacks and packing cases.

"He all light?" enquired the Chinaman, looking around him with a pleased smile.

"You bet!" ejaculated Tom, while Betty clapped her hands and danced up and down with delight.

"Two sacks of flour," Tom checked off; "one of potatoes, a hundred pounds of sugar, a case of coal oil, besides cases of all kinds of tinned stuff, and piles of groceries. Looks as if we could stand quite a siege. What do you say, Bet? Stacks of bacon and hams, too!"

"We never could have done it without Ling, Tom! How much money you have to pay, Ling? I think you have to pay one hundred dollars for so much groceries." Betty named the sum at random, to signify a large amount, for her ideas on the subject of money were very vague.

When Ling nodded his head slowly in assent, she was a good deal alarmed.

"Yes, Missy. Plenty glocely, cost ninety-five dollah. My clousin buy him for me—Chinee glocely—nobody tell bad man who buy."

"Good idea!" said Tom, struck by the Chinaman's wily forethought. If such a large purchase had been made at the store where the family usually dealt, Mr. Lembky would soon have heard about it and it would have given him a clue.

"But ninety-five dollars, Tom!" cried Betty, aghast at the enormous amount. "How ever are we to pay it? I didn't know groceries cost so much."

"I told Ling to get provisions for three months, and plenty of them. Didn't think they'd cost so much, either. There's my ten dollars, you know."

The brother and sister looked at each other in deep embarrassment. To be indebted to their Chinaman, to have imposed on his good nature to such an extent, was little short of disgraceful as they saw it now.

Ling was watching them both while pretending to be checking the parcels.

"You pay me some day bimeby; no hully," he said.

There was no reply from the two children, who still stood in the same position, lost in thought.

"I suppose we've a right to whatever is in the house," said Betty after a while.

"We sure have—a better right than old Lembky," cried slangy Tom. "What is there Ling could use, or sell?"

"There's the automobile," said Betty, almost in a whisper.

The idea was so audacious it came near frightening them, and it so entirely frightened Ling that it required a full hour of their united persuasions to induce him to agree to their proposal.

As usual, Betty's brain evolved the plan, which was as follows:

Ling was to go back to Chinatown that very night and arrange to sell the automobile—which was a new and expensive one. How, to whom, and for how much, were matters left entirely to him to settle, for, as they explained to him elaborately, the machine was his to do what he liked with in consideration of all that he had done for them. It seemed so simple to them, but Ling shook his head dubiously.

On the one hand he might sell the machine and make five or six hundred dollars on the transaction; on the other hand, as he very well knew, he might be arrested for theft and sent to jail—for who would believe him when he told them that the children had made him a present of the automobile?

"I tink, Missy Betty, Tom, I sell automobile for you. I give you money. You pay me for glocelies. Lat good." And that was all the old Chinaman would consent to.

Clever old Ling had a convenient "clousin" who agreed to purchase the machine, and at midnight he was back again in the kitchen with him. There he left him while he went upstairs and roused the children, insisting that they should come down and sign the papers

which he had brought with him and which he imagined would free him from all responsibility in the matter.

There was a Bill of Sale, made out by the merchant who had supplied the groceries and who could write English. Two hundred dollars was paid on account, and notes were given for the balance of the purchase money, which was \$400.00, a small sum for the handsome car, but, as Ling explained, all he could get on account of the risk attaching to the transaction.

There in the brightly lit kitchen, with blinds drawn, a soft rain pattering outside, and in the house the silence of midnight, the two children and the two Chinamen concluded the business.

It was a queer scene and a queer transaction. Betty, in her pale blue flannel wrapper, with round, flushed face and eyes sparkling with excitement, looked a mere child as she signed the first receipt she had ever given in her life, without a notion that as a legal document it was absolutely valueless.

Tom, more stolid, and looking older than his sister, counted the twenty ten-dollar bills over and over, and looked curiously at the notes, signed in Chinese characters by Ling's "clousin."

All the while the Chinamen chattered volubly in their own language. Again and again it would seem Ling had to explain some difficulty and reassure his "clousin," who was trembling with excitement.

At last it was all over. Ling refused to take a cent more than the amount of the grocery bill and his wages; so the rest of the money Tom and Betty divided between them to keep for future use, and felt as rich as if they had suddenly inherited the wealth of the Indies.

Strange to tell, this sale of the automobile was the wisest move the children could have made to elude Mr. Lambky, or put him on the wrong track. For a day or two later, when they were found to be missing, and the automobile was also gone from the garage, what more likely to conclude than that they had taken it to get away with?

In that case it was only a question of time—and a very short time, the lawyer thought—to track them and bring them back. Automobiles driven by children are easily traced, or so thought Mr. Lembky. But he was obliged to change his mind when after weeks of fruitless search and enquiry, he failed to discover the smallest clue.

(To be Continued.)

B. C. Market Commissioner's Report

TO THE DEPUTY MINISTER OF AGRICULTURE, VICTORIA, B. C.

Winnipeg, July 2nd: The Rogers Fruit Co. stated that cherries are now coming in from North Yakima and other Washington points, Royal Anne and Bings, mainly in the 24 box crates. Yakima is also sending in last year's apples, Winesaps, which cost \$2.00 F. O. B. there, and are selling to the retailer at \$3.50 per crate. They state that the co-operative method of handling cars, now adopted by Winnipeg wholesalers, goes a long way to prevent glutted markets at that point, and also makes possible the handling of much larger quantities of fruit, thus working out to the shipper's advantage in the long run. As two or three cars can be cleared up every day, there is no delay in disposing of the fruit after its arrival at its destination, and it can thus be offered to the consumer in the very best condition. California stuff is coming in pretty freely—Royal 'cots, Clyman plums, peaches, etc. California has a large crop and is willing to contract for her fruit at pretty reasonable prices.

The Bright Emery Co., whose Manager has had special charge of the strawberry deal for the Winnipeg houses, stated that they had had reason to be satisfied with all the strawberries brought in from the other side, except the Hood River and some of the Vashon and Bay Island berries. The last car of Vashons was coming in this week, and would sell at \$5.00 a crate.

Very few B. C. strawberries had reached Winnipeg this season and those were sold by the McNaughton Fruit & Produce Co. Exchange.

The first shipment of raspberries from Puyallup, two cars, came in on the 29th ult. and another arrived this morning. 20 to 25 cars of raspberries are expected in from that point this season.

The cherry market here is rather overloaded, and has been for some time, mainly with Washington cherries, all sweet, Bings and Royal Annes. They are packed in the four basket crate, which is proving very popular, winning people to buy cherries who have never bought before. Sweet cherries in this crate sell wholesale at \$3.50 to \$4.00.

The McNaughton Fruit & Produce Exchange reports very little from British Columbia this season, not more than 35 to 40 crates of strawberries. Fifty crates of Lambert cherries arrived from the Kootenay this morning, a little soft. A car of Wenatchee cherries also arrived for this Company, who, it may be mentioned incidentally, take no part in the car-pooling arrangements of the other wholesalers. The cherries were fine, both in quality and condition.

It was learned in Winnipeg on good authority that up to June 25th, cars of strawberries had reached Northwest distributing points from Seattle and Spokane as follows: Calgary, 14; Edmonton, 8; Moose Jaw, 5; Regina, 5; Saskatoon, 2; total, 34.

In conversation with Mr. Ford, General Superintendent, Dominion Express Company, Winnipeg, the latter stated, with reference to the long-standing grievance as to the 20,000 car minimum that he had recommended the building of larger cars—8 feet longer, so that there would be no need to crowd the fruit to the hotter top part in order to ship the minimum insisted on.

Moose Jaw, July 4th: No strawberries at all on this market. First carload of raspberries was expected yesterday, but has not yet arrived. Illinois cukes arriving for the Rex Fruit Co. at the rate of about 20 boxes a day, and selling at \$2.00 a dozen, or \$3.75 per box of two dozen. This Company also reported having had cukes from Vernon which were not so good in quality, uniformity of size, etc. This market has been comparatively bare of cherries for the past few days. California plums, peaches and apricots arriving freely.

Medicine Hat, July 5th: Two wholesale houses here, the Medicine Hat Grocery Co. and a branch of the Macpherson Fruit Co. No cars of small fruits are brought in to this point, the jobbing houses receiving whatever they need in small express shipments from Calgary, Moose Jaw or Lethbridge wholesalers, or direct from the grower. Twenty-five crates of Spokane strawberries that came

in this morning sold for \$3.75 per crate. Kootenay and Creston berries are arriving in excellent condition, and in quantities below the demand. Selling at \$3.50 to \$3.75 per crate for good stock. Seventy cases of Okanagan sour cherries selling today at \$2.25. Another shipment from Okanagan of black currants, cherries and gooseberries is expected in tomorrow. California Bink cherries, selling for \$2.00 per 10 lb. crate. A car of California peaches, plums, apricots and apples is expected today, to be divided between the two jobbing houses. The first B. C. raspberries, three cases, came in this morning from Hatzic, only fair in condition and quality. Saw also some sound but poor and undersized rhubarb from Mission exposed for sale.

Calgary, July 6th: The Vernon Fruit Co. reports that during the past two weeks, small fruits of all kinds have been arriving from B. C. points in first class condition. The raspberries from Mission and Hatzic have been particularly good, and as no Washington raspberries in carloads have yet reached this point, they have found a bare market and have been selling at good prices. Hammond and Haney strawberries are also coming in in good shape. Saw some very fine Lambert cherries from Vernon district and others from the Kootenay. This Company expect their first car of Okanagan potatoes in on Monday. They state that on a mixed car of vegetables from Walla Walla, which they have just cleared up, they were quoted as follows: F. O. B. Walla Walla—cabbages, potatoes and onions, \$20 a ton; beets, carrots and turnips, \$15 a ton.

Prices to retailers today are: Raspberries, \$3; black currants, \$3 to \$3.25; red currants, \$2.75 to \$3; gooseberries, small crate, \$2.25 to \$2.50; large crate, \$3.25 to \$3.50; preserving cherries, 4 baskets to the crate, \$1.50; strawberries, \$3.50; new potatoes, 3 3-4c a lb.; new cabbage, 3 1-2c per lb.; new beets, 4c; new carrots, 4c per lb.

An interesting side light is thrown upon the difference between the seasons of 1911 and 1912 by a comparison of the fruit received by the Vernon Fruit Co. in corresponding weeks of these two years: 1911, July 1-6, strawberries, 392 crates; raspberries, 17 crates; red currants, 13 crates; gooseberries, 22 crates; cherries, 7 crates. 1912, raspberries, 312 crates; gooseberries, 14 crates; cherries, 94 crates; black currants, 50 crates; red currants, 69 crates; strawberries 43 crates.

Messrs. Plunket & Savage received one car of strawberries in today from Green Bluff near Spokane, excellent stock, which is selling at \$3.50 per crate. They state that no carload shipment of raspberries have yet arrived on this market. The first car from Puyallup, Wash., is due in on the 10th, and two other cars are also expected in next week. These raspberries will cost \$2 to \$3.25 F. O. B. Spokane, and will sell at \$3.75 per crate. The Company is also expecting next week a shipment of peaches and apricots from Kenewick, Wash., a car of yellow transparent apples from Washington points, and a car of cherries from Lewiston, Idaho. They state that they can lay down potatoes from Walla Walla at \$49 a ton. The earliest shipments of potatoes are arriving in apple boxes which contain from 55 to 58 lbs. A car of potatoes in sacks, which is due to arrive on the 8th inst., will cost them 90c per 100 lbs. F. O. B. Walla Walla, 35c duty and 67c freight, total, \$1.92 per 100 lbs. Three or four cars of California peaches, plums and apricots reached this market last week. The peaches are beginning to come in riper. Alexandra and Hales have been arriving so far. The first car with Triumphs came in today. They are selling to retailer as follows: Peaches, \$1.75 to \$2; plums, \$2 to \$2.25; apricots, \$1.75; California apricots are being quoted at 60c per crate there. Messrs. Plunkett & Savage received a quotation today of 60c per crate on 15 cars of apricots at North Yakima. This Company expect to receive a mixed car of raspberries, black currants, red currants and cherries from Green Bluff, near Spokane, next Tuesday.

Regina: A correspondent from Regina, under date of July 5th, says: "Recent cyclone has demoralized business generally, the rainy weather adding to general bad conditions. California fruit is in fair supply. There is fair demand for cherries in good condition, but ripe stock is not wanted."

Moose Jaw: A correspondent at Moose, Jaw, under date of July 5th, says: "Cherries in 10 lb. crates from Yakima and Clarkston, \$1 F. O. B. port of shipment, selling at \$2 and \$2.25. Canadian sour cherries, 16 lbs. to the crate, selling at \$2.75. Washington fruit quoted for this week's shipment: Plums, 60c; peaches, 60c; apricots, 70c. Washington raspberries are not moving on account of the rain throughout Saskatchewan, and the consequent demand."

The Dominion Express Agent at Calgary furnishes the following statement of fruit shipped from British Columbia points during the weeks June 22—July 6:

Strawberries	Gooseberries	Currants	Cherries	Tomatoes	Raspberries	Cukes	Date
108	1	4	15	....	.....	13	June 22
209	23	4	78	....	.....	11	" 24
20	8	5	19	....	.....	....	" 25
114	6	1	32	....	13	16	" 26
103	27	5	47	....	11	....	" 27
128	29	44	60	1	26	6	" 28
93	6	10	40	....	1	18	" 29
122	15	34	190	12	29	4	July 2
20	2	....	23	10	53	....	" 3
18	1	7	50	10	41	13	" 4
28	7	35	71	15	126	3	" 5
29	10	90	115	15	158	12	" 6
992	132	239	740	63	458	96	

Macleod, July 15th. (Pop. 3,000): Retailers here handled few B. C. strawberries. Claim B. C. could not meet prices. Spokane fruit houses sold at \$1.75 and even \$1.50 per crate, F. O. B., duty 48c; express per case at rate of \$2 per 100 lbs., 60c; cost laid down, \$2.58 to \$2.83. Creston berries, \$2.75 per crate, F. O. B.; express at rate of \$2 per 100 lbs., 60c; cost laid down, \$3.35.

Few B. C. raspberries handled here this year. Spokane selling raspberries \$2 per crate, F. O. B. Spokane; duty, 48c per crate; express, 60c; cost, laid down, \$3.08 for 3-5 qt. crate; Creston raspberries, quoted \$2.50 F. O. B. there; express, 40c for 2-5 qt. crate, or 60c for strawberry crate; cost, laid down, \$2.90 to \$3.10. Raspberries selling retail, \$3.50; demand good.

Saw excellent sweet cherries from Grand Forks. Cost, laid down, \$3.35. Selling retail, \$3.75. Gooseberries, cost laid down, \$2.50 per crate. Selling retail, \$3.25. Saw B. C. rhubarb, old and tough, not to be compared with local rhubarb, selling in same market.

Local potato crop will be good. Vegetables generally doing well locally, though cutworm has done considerable damage. Local potatoes should be ready in a couple of weeks. When local crops come in, little outside vegetables required. Year before last eight cars B. C. large fruit were used in McLeod. Should be fair demand this year.

Claresholme, Alta., July 16th. (Pop. 1,000): Few B. C. strawberries or raspber-

ries handled here this year, much less than in the past. Business done largely through Calgary and Spokane. Complaint made that raspberry boxes not filled. Few raspberries on the market. Local vegetable prospects fair. Potatoes excellent. Cutworm has damaged cabbages and small truck. One carload of last year's potatoes shipped out this spring. Town should dispose of two or three carloads of apples a year. Farmers' Union usually buys one for members.

Lethbridge, Alta., July 17th. (Pop. 12,000): Three jobbers here, Macpherson Fruit Co., Plunket & Savage, W. G. Sooly. Retailers also do business direct with Spokane. Considerable amount of B. C. strawberries and raspberries reached this market this season, usually in good condition. Spokane raspberries costing \$3.08 laid down, i.e., \$2 F. O. B. Spokane; duty, 40c; express, 60c; clearing; 10c; Crestons, laid down, \$3.10. Some complaint from retailers of unbusiness-like methods on part of individual shipper. Orders taken and no notification of subsequent inability to fill, resulting in great dissatisfaction. American strawberries arrived largely in less than carload lots, and were, in many cases, soft and mouldy.

Macpherson Fruit Co. states sweet cherry market greatly overloaded. Hundrers of boxes consigned and selling; Bings, \$1 per 10 lb. crate; Royal Annes, 75c per 10 lb. crate. Twenty pound "lug" pack, for cherries, new on this market, likely to be popular. Many Idaho Bings on consignment are coming in this package. Selling at \$1.50 per box. Carload of Idaho and Washington apples, Astrachans and Yellow Transparents, shipped tomorrow. Washington peach plum, quoted at 60c, F. O. B. Clarkston; peaches, Triumphs, 50c. Mississippi tomatoes selling at \$1.25 per crate. Walla Walla rhubarb, consigned, selling at \$1.50 per 40 lb. case. Local new potatoes will come in in a week or ten days.

Plunket & Savage report practically all American strawberries on market this year were Spokanes. No Vashens or Hood Rivers. Estimates 4 carloads disposed of, mostly in small shipments. One carload lot only. Express rate the same whether single case or carload, and carloads, in addition, pay icing charge. Market hungry for raspberries. 150 cases sweet cherries sold yesterday at 75c and \$1, good stock, consigned from Hyer's Falls. Fourth car mixed California fruit arrived today.

W. G. Seely, doing retail and jobbing business, largely with Idaho fruit, on consignment basis. States Idaho peach crop large. Expects prices will be low, 40c a box, F.O.B.

Medicine Hat, July 18th: Medicine Hat Grocery Co., jobbers, report one car of California fruit in Saturday; apples, Astrachans, Alexanders; Bartlett pears; Trump peaches; Tragedy, Clyman and peach plums. Another car expected next week. Satisfaction expressed with quality and condition of Creston strawberries and raspberries received. I saw 12 cases black currants from Kelowna Farmers' Exchange, unsold from consignment received 12th. Excellent when received, but now mouldy. No demand. Saw a number of crates of Okanagan sweet cherries, good quality, selling at \$3 per case. Good demand for preserving cherries, but sweet cherry market slow. Expect mixed car of Lewiston and Washington fruit next week at following prices: Apples, Red Astrachans, Pippins, Alexanders, 90c; Bartlett pears, \$1.75; peaches, 40c; apricots, 60c.

Saw some excellent preserving cherries from Nelson at retailers. Also black currants from Mission. Blackcaps, selling retail, \$4 a crate. B. C. raspberries, \$3 per crate.

Express agent states that much small fruit is coming in from Lower Mainland points consigned to Vernon Fruit Co., who, now, have no representative here. He has turned it over to a broker, but satisfactory returns can scarcely be expected from fruit for which no one is responsible. 11 cases of splendid raspberries came in, in this way, from Hatzic this morning.

High River, Alta., July 19th. (Pop. 1,600): Has been considerable demand for B. C. strawberries, but small supply. Creston found it impossible to fill orders taken. Raspberry supply better. Both raspberries and strawberries reported excellent in quality. Some dissatisfaction with raspberries on score of boxes being unfilled. On account of small supply of B. C. raspberries, retailers have had to buy from Calgary jobbers. Comparative cost, laid down: Creston, \$2.75 per case; Calgary, \$3.10 per case; express rate, Calgary to High River, 60c per 100 lbs.; Creston to High River, \$2.40 per 100 lbs. Saw excellent black currants from Notch Hill, B. C. Cost \$4.50 per strawberry crate, F. O. B. Calgary. Local vegetable crop prospects excellent, especially potatoes. Last year's local potatoes a drug on market. Retailers buying from farmers, 50c a bushel, 60 lbs., for shipping out. Estimate two or

three cars apples used at this point every year.

Calgary, July 20th: Representative of Wenatchee Fruit Growers' Association sold a car of apricots here, 18th, at 75c. He states his organization will handle 2500 cars of apples this year. Wenatchee shipped first car mixed peaches, apricots, plums, apples, on 17th. Prices, there: Apples, Yellow Transparent and Duchess, \$1 a box; peaches, 50c.

Vernon Fruit Company reports B. C. berries, raspberries and black currants arriving in good shape. Some Kootenay raspberries in 4-5 qt. boxes were soft. Raspberries will not carry in large box. One case Okanagan Yellow Transparent apples received. Also 2 cases Okanagan peaches. They give wholesale prices current: Raspberries, B. C.'s, 2-5 qts., \$2.65 per case; cherries, per 10 lb. box, Bings, \$1.50; Royal Annes, \$1.50; sweet cherries, per 24 box crate, \$4.50; red currants, \$3.50; black currants, 4-5 qts., \$4.50, 2-5 qts., \$3.25.

Macpherson Fruit Co. states three cars Puyallup red raspberries in this week, also two of blackcaps; three more cars, red, due Monday, Wednesday, Friday. Cars, express, leave Puyallup 2.30 p.m. one day, reach Calgary 11.50 a.m. next. Selling, red, 3-5 qts., \$4; black, 3-5 qts., \$3.25. Last car strawberries on the 16th from Spokane, selling at \$4. Car Yakima mixed fruit, apricots, peaches, apples, in 16th. Another due 24th. Wenatchee quotations: Peaches, 40c; plums, 75c; apples, Y. T. and Alexanders, \$1; apricots, 50c and 60c. Market has been glutted with consigned Washington and Idaho sweet cherries, but is fairly clear now, and Bings, 10 lb. boxes, now selling \$1.25 to \$1.75. One car Walla Walla vegetables received 18th. 5 cars B. C. vegetables, Kelowna and Armstrong, potatoes, cabbages, beets, turnips, etc., received so far. One car Hatzic rhubarb shipped 16th.

Correspondent from Winnipeg reports, 19th inst.; "Few Washington plums and peaches arriving in good condition. Demand good, prices fair. This week will clean up Washington cherries. Big movement Washington apricots next week. Prices fair. Western raspberries over. Good demand for B. C. Cherries, Bings or Lamberts preferred. Heavy movement California pears, peaches, plums. Demand good, prices good."

Correspondent from Regina, reports 19th inst.; "B. C. raspberries selling \$2.60 to \$2.90. Cherries, \$2.50. California fruit in good supply, fair demand. Washington

apples, \$2.50 to \$2.90; plums, \$1.65; apricots, \$1.60; peaches, \$1.50. Vegetables in fair demand."

Another Regina correspondent reports, 19th inst.; "Plentiful supply B. C. raspberries past three days. Car Americans arrived 17th. B. C.'s selling \$2.60 to \$3.25. Americans, \$2.50 to \$4.50. Good supply American apricots, peaches, apples, plums, new potatoes. We expect car mixed vegetables from B. C. Prices dropping in these."

Brandon correspondent reports, 19th inst.: "Washington raspberries selling freely, \$4.35. Ontario sour cherries selling freely, \$2. California plums, \$2. California Triumph peaches, \$1.25 to \$1.50. Washington apricots just arriving and selling very freely at \$1.60 to \$1.85. California, Crawford and Elberta peaches will arrive next week, and will sell at \$1.35 to \$1.50. New Washington apples selling \$2.50 to \$2.65."

Edmonton correspondent reports, July 14th: "Received last week first car Puyallup raspberries. Selling \$5 to \$5.25. Expect Washington 'cots shipped 18th or 20th. New apples from Washington quoted for shipment 15th, as low as 85c per case. Lot of cher-

ries coming on market, a good many on consignment."

J. FORSYTH SMITH,
Commissioner.

IT LOOKED SO.

Freddie, accompanied by his governess, was passing a street where a load of straw had been scattered in front of one of the houses in which there had been a serious illness.

"Miss Manning, why did they put all this straw here?"

"Well, Freddie," she replied, "a little baby came to Mrs. Reed last night."

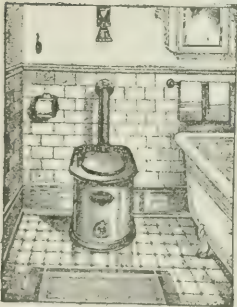
"My," said Freddie, "but it was well packed."

She: "John, just look at little Maggie (aged 3 weeks) the darling grows more beautiful every day. She will make a good match some time or other."

He: "For goodness sake, don't talk about such things before the child."

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Elsewhere in the advertising section of this number will be found half-size halftone cuts of the "*Golden Gems of Life*" and "*Webster's Reliable Dictionary*," two of the best premiums ever offered in connection with any publication in Canada. These splendid works are not only handsome volumes, but most valuable additions to any first-class home library. The minimum selling price of these books, which we now offer free to our readers, is \$2.50 each.

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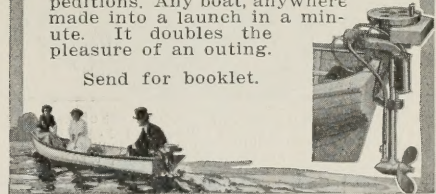
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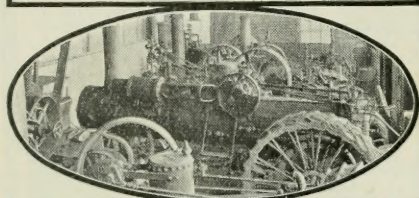
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